



82557-1



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

SEP 19 2006

Mr. Robert Butz
Agent for: Sinon USA Inc.
Keller and Heckman LLP
1001 G Street, N.W.
Suite 500 West
Washington DC 20001

Subject: Paraquat SL Herbicide
EPA Registration Number 82557-1
Application dated April 26, 2006
Amendment to Remove Time Limitation

Dear Mr. Butz:

The request for amendment referred to above, submitted in connection with registration issued under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, has been reviewed by the Agency.

The terms and conditions stipulated in the Notice of Pesticide Registration dated January 25, 2006, for EPA Registration Number 82557-1, registered in accordance with FIFRA section 3(c)(5), are hereby amended as follows:

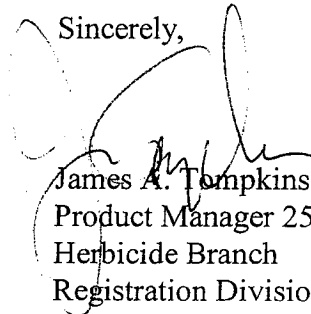
- 1) This registration will expire, without hearing rights, on September 1, 2008, unless the registrant submits an amendment to remove the time limitation no earlier than six months before the expiration date.
- 2) Upon receipt of the amendment, the Agency will review all available information and will re-evaluate whether the registrant's product still differs only in ways that would not significantly increase the risk of unreasonable adverse effects on the environment.
- 3) The Agency will issue its decision on the amendment request taking into account the determination described in paragraph 2 no later than the expiration date of the registration.
- 4) If the Agency fails to make the determination described in paragraph 2 by the expiration date, the registration will remain in effect until the Agency makes such a determination as described in paragraph 5.
- 5) If the Agency determines that the registration no longer meets the standard for registration as described in paragraph 2, the Agency will notify the registrant of this decision to deny the amendment. The Agency will initiate a Notice of Intent to Cancel the registration pursuant to section 6(e) of FIFRA.

- 6) If the Agency determines that the registration continues to meet the standard for registration, the amendment request will be granted and the time limitation will be removed or conditioned upon other terms that are necessary in light of the new information.

Please be reminded that the outstanding product chemistry data requirements 830.6317 (Storage Stability) and 830.6320 (Corrosion Characteristics) must be submitted to the Agency by January 25, 2007.

If you have any questions, please contact Hope Johnson at 703-305-5410.

Sincerely,



James A. Tompkins
Product Manager 25
Herbicide Branch
Registration Division (7505P)

SEP 11 2006



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WASHINGTON, D.C. 20460

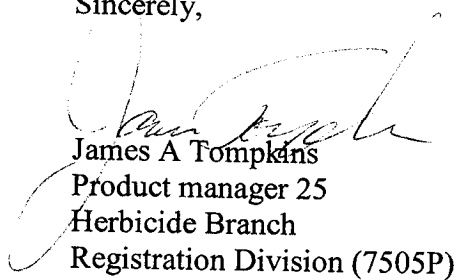
OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Sinon USA Incorporated
1080 Carol Lane, Suite 264
Lafayette, CA 94549

Subject: Paraquat SL Herbicide (Revised Basic CSF)
EPA Registration Number 82557-1
Application Dated September 8, 2006

The evaluation of the revised basic confidential statement of formula (CSF), as outlined above, has been completed. The basic CSF dated September 5, 2006 is acceptable and our records have been modified accordingly.

Sincerely,



James A Tompkins
Product manager 25
Herbicide Branch
Registration Division (7505P)

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Page _____ is not included in this copy.

Pages 41 through 7 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☐ Attorney-Client work product.
- ☒ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

TRANSMITTAL DOCUMENT

Submitter

Sinon USA Incorporated
1080 Carol Lane, Suite 264
Lafayette, California 94549

Regulatory action in support of which this package is submitted

Product Registration Amendment
(Paraquat SL Herbicide™, paraquat 43.8% SL, 82557-1)

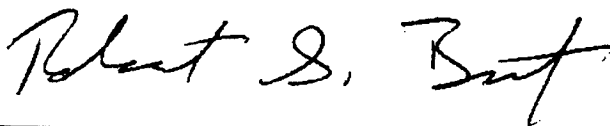
Transmittal Date

April 25, 2006

Submitted Studies

	MRID	
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Document 1:		Butz, Robert G, et al. April 25, 2006. Assessment of Paraquat SL Herbicide™ (EPA Reg No. 82557-1) ChemReg International, LLC. 65 pages.

Company Official



Company Name: ChemReg International, LLC., Authorized Agent for Sinon Corporation
Company Contact: Robert G. Butz
Phone Number: 703-492-0541

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Page _____ is not included in this copy.

Pages 9 through 73 are not included in this copy.

The material not included contains the following type of information:

- _____ Identity of product inert ingredients.
- _____ Identity of product impurities.
- _____ Description of the product manufacturing process.
- _____ Description of quality control procedures.
- _____ Identity of the source of product ingredients.
- _____ Sales or other commercial/financial information.
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- _____ The product confidential statement of formula.
- _____ Information about a pending registration action.
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- _____ The document is not responsive to the request.
- _____ Internal deliberative information.
- _____ Attorney-Client work product.
- _____ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

**RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS
UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED
BY THE CERTIFIED APPLICATOR'S CERTIFICATION.**

PARAQUAT SL HERBICIDE™

***Defoliant and desiccant herbicide
for the control of weeds and grasses and as a harvest aid.***

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID.
- SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE STENCHING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'- Bipyridinium dichloride) 43.8%

Other Ingredients: 56.2%

Total: 100.0%

Contains 3.0 pounds paraquat cation per gallon as 4.143 pounds salt per gallon. Contains stench (odor) and emetic.

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO



POISON

**Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)**

EPA Reg. No. 82557-1

EPA Est.: 70552-TWN-001

Net Contents: 2.5 gal.

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FIRST AID Contains Paraquat, a Bipyrindinium Herbicide Have the product or label with you when calling a poison control center or doctor, or going for treatment.	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor IMMEDIATELY for treatment advice. • SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an absorbent such as activated charcoal, bentonite or Fullers Earth. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • The odor of this product is from the stenching agent, which has been added, not from the paraquat. • If person is not breathing, call 911 or an ambulance. • Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an absorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat; however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
HOT LINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call CHEMTREC 1-800-424-9300.	

See back/side panel[s] for additional precautionary statements.

Figure 1 displays a 3x3 grid of small images showing various types of human faces, including different expressions and features.

Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses was plotted against the number of trials for each condition. The number of correct responses increased with the number of trials for all conditions. The number of correct responses was highest for the condition with the highest number of trials (10 trials) and lowest for the condition with the lowest number of trials (2 trials).

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~~75~~

DANGER. May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist respirator. Causes irreversible eye damage. Wear protective eyewear. Do not get in eyes or on clothing. Harmful if absorbed through skin. Avoid contact with skin. **IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

Applicators and other handlers (other than mixers and loaders) must wear:

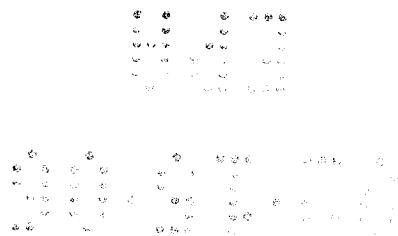
- Long-sleeved shirt and long pants
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Shoes plus socks
- Protective eyewear
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

- Long-sleeved shirt and long pants
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Shoes plus socks
- Dust mist NIOSH-approved respirator with ANY N, R, P, or HE filter.
- Chemical resistant apron
- Face Shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

- Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.



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Environmental Hazards

This product is toxic to wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs because it desiccates all green plant tissue. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Refer to the local state laws, regulations, guidelines, and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial application during periods of thermal inversion.

Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

DIRECTIONS FOR USE

Restricted Use Pesticide. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to use of this product that are covered by the Worker Protection Standard.

For preplant or preemergence (broadcast or banded), chemical fallow, postemergence directed spray applications, early postemergence broadcast in peanuts and dormant season applications, and "between cutting" applications in alfalfa: Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For harvest aid and desiccation application: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).



NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow others to enter the treated area until sprays have dried.

AVOID working in spray mist.

KEEP all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Store in original container and place in a locked storage area. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. Store at temperatures above 32°F. For Emergencies involving a Spill, Leak, Fire, Exposure, or Accident, Contact: CHEMTREC at (800) 424-9300.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not reuse container as container is not safe for food, feed or drinking water! Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INSTRUCTIONS AND INFORMATION

Do not apply this product through any type of irrigation system.

When PARAQUAT SL HERBICIDE™ is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive SHOULD be used. Always refer to the additive label for rates of applications, directions for use, limitations, and restrictions.

Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

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The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

AERIAL DRIFT REDUCTION ADVISORY INFORMATION

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environment conditions (**see Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle that is designed for the intended application. With most nozzle types, narrower spray angles produce droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

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Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set-up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

GENERAL INFORMATION**APPLICATION**

PARAQUAT SL HERBICIDE™ is a contact herbicide is for control or suppression of a broad spectrum of emerged weeds including most annual small broadleaf and grass weeds. It can also be used to suppress perennial weeds by destroying green foliage and as a desiccant/defoliant at harvest.

Complete coverage of target weeds is necessary to get good control because PARAQUAT SL HERBICIDE™ is a contact-type herbicide. It is also necessary to obtain complete coverage for good crop desiccation and defoliations. Undesirable weed control and undesirable crop desiccation/defoliation will result if improper application technique and/or application to large, stressed, or mown weeds are made. Refer to the following details for specific application instructions.

PARAQUAT SL HERBICIDE™ is a liquid formulation containing 3 lbs. of active ingredient per gallon. It contains a nontoxic odor to help prevent accidental ingestions. It also contains an emetic (an agent which will induce vomiting if the product is swallowed).



Through coverage of all green foliage is required for efficacious weed control and crop defoliation and desiccation because PARAQUAT SL HERBICIDE™ requires actively growing green plant tissue to function. Drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines are unaffected by application with PARAQUAT SL HERBICIDE™.

There is no residual soil activity to affect later-planted crops or later germinating weeds because clay and organic matter rapidly tie up PARAQUAT SL HERBICIDE™.

ROTATIONAL CROPS

After the last application PARAQUAT SL HERBICIDE™, all rotational crops may be planted immediately.

RAINFASTNESS

Rain occurring 30 minutes or more after application will have no effect on the activity of PARAQUAT SL HERBICIDE™ because it is rapidly absorbed by the weed foliage.

USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

The following should always be added and be used at the recommended rates or there will be a reduction in efficacy of PARAQUAT SL HERBICIDE™.

Nonionic Surfactant: Either add a nonionic surfactant containing 50-74% surface-action agent at 0.25% v/v (2 pts./100 gals.), or add nonionic surfactant containing 75% or more surface-active agent at 0.125% v/v (1pt./100 gals.), of the finished spray volume for groups applications. Add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume for aerial applications.

Crop Oil Concentrate: For ground applications, add a nonphytotoxic crop oil concentrate that contains 15-20% approved emulsifier, with 1.0% v/v (1 gal./100 gals.) of the finished spray volume. Add 1 pt. of crop oil concentrate per acre for aerial applications. For cotton harvest aid, do not use crop oil concentrate when using PARAQUAT SL HERBICIDE™.

NOZZLE SELECTION

The use of flat-fan nozzles is the most effective application of PARAQUAT SL HERBICIDE™. The use of flood nozzles may result in a reduction of weed control due to inadequate coverage because they produce large uneven droplets.

Use only flat fan nozzles when spraying less than 20 gallons of spray carrier per acre using the following table.


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Table 1. Recommended Nozzle Type and Spray Pressures and Setup

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

Reduced control will result if nozzles, pressures, or setups differ from the above chart.

SPRAY CARRIER

PARAQUAT SL HERBICIDE™ may be inactivated by muddy water, or suspension-type fertilizers containing clay. Therefore, always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying PARAQUAT SL HERBICIDE™. Never use suspension-type fertilizers containing clay as the spray carrier. Always use the higher rate of PARAQUAT SL HERBICIDE™ and surfactant if using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier.

Note: It is important that when using liquid fertilizers such as 28% N as a spray carrier, that nonionic surfactant still be used with PARAQUAT SL HERBICIDE™. The use of liquid fertilizer carriers are not substitutes for surfactants.

RATES OF PARAQUAT SL HERBICIDE™

With each use, follow recommended rates listed in the following tables. When weeds are larger or are dense, use the higher label rates. For use as a harvest aid, use higher rate when crop vegetation is dense. Do not exceed 0.50 lbs. a.i./A in a minimum of 30 gallons of spray for broadcast applications with backpack sprayers.

SPRAY VOLUME

With each use, follow recommended minimum spray volumes listed in the following tables. Spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage because the volumes listed are minimum volumes only.

TARGET WEEDS SHOULD NOT EXCEED SIX INCHES IN HEIGHT WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE.

Application Timing

Applications should be made to small emerged weeds. Larger weeds more than 6 inches in height may be more difficult to control than weeds 1 – 6 inches in height. If possible, when green foliage is removed either from grazing or mowing, allow the weeds to grow 2-4 inches in height. Also, during harvesting forage or grain crops before spraying, weeds present in the field are also cut. Therefore, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height allowing sufficient green foliage to remain for applications.

BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

The best results occur for control of grass cover crops or volunteer cereals, when PARAQUAT SL HERBICIDE™ is applied prior to tillering or after boot stage, especially with a wheat cover crop or volunteer wheat. Complete control may not be achieved with treatments made between tillering and boot stage. Complete control of perennial cover crops should not be expected.

ENVIRONMENTAL CONDITIONS

This product is active over a wide range of environmental conditions such as cool (below 55°), cloudy or overcast weather. However these conditions will slow the activity of PARAQUAT SL HERBICIDE™.

SPOT SPRAYING

Refer to the following table if only small areas are to be sprayed with labeled applications.

Mixing Instructions for Small Quantities for Spot Spraying

If the Broadcast Rate Per Acre for PARAQUAT SL HERBICIDE™ is:	Add The Following Amount of PARAQUAT SL HERBICIDE™ to 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Add $\frac{1}{3}$ - $\frac{1}{2}$ fl. oz. of a nonionic surfactant for each gallon of spray at all times. Thoroughly wet the foliage, but not to the point of runoff when spot spraying in this manner.

TANK MIXING: ENHANCED BURNDOWN OF DIFFICULT-TO-CONTROL WEEDS AND FOR RESIDUAL WEED CONTROL**Photosynthetic Inhibitor Herbicides**

To control difficult weeds, tank mix PARAQUAT SL HERBICIDE™ with other herbicides. The addition of other photosynthetic inhibitors (PSI) herbicides will slow the activity of PARAQUAT SL HERBICIDE™. This allows PARAQUAT SL HERBICIDE™ to thoroughly distribute throughout a treated leaf, thus achieving better control than if PARAQUAT SL HERBICIDE™ is applied alone.

PARAQUAT SL HERBICIDE™ may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide
Atrazine Herbicide
Bicep MAGNUM® Herbicide
Bicep Lite II MAGNUM® Herbicide
Canopy® Herbicide

Lariat® Herbicide
Lexone® Herbicide
Linex® Herbicide
Lorox® Herbicide
Lorox Plus™ Herbicide

Princep® Herbicide
Sencor® Herbicides

Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.

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Improved Weed Control with PSIs

The addition of a PSI herbicide will help improve the control of difficult weeds listed below. Make a second application for best results.

Barnyardgrass	Kochia	Perennial weeds
Broadleaf signalgrass	Lambsquarters	(suppression only)
Cheatgrass	Malva (cheeseweed)	Prickly lettuce
Cocklebur	Marestail	Sedges
Fall panicum	Morningglory	Tansymustard
Giant ragweed	Pennsylvania smartweed	Velvetleaf
Knotweed		Volunteer wheat

Improved Control of Perennial and Annual Broadleaf Weeds

Tank mixing with labeled 2,4-D ester (Low Volatile), 2,4-DB or Banvel® herbicide will help improve control when perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc., or difficult to control annual broadleaf weeds such as giant ragweed or morning glory are present. Reduced grass control may be achieved when tank mixing the amine formulation of 2,4-D with PARAQUAT SL HERBICIDE™.

Order of Tank Mixing

It is advisable to tank mix PARAQUAT SL HERBICIDE™ and other listed products as follows:

1. Fill spray tank ½ full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add PARAQUAT SL HERBICIDE™ to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to other pesticide products labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

It is advisable to perform a jar test to check physical compatibility when using different formulation of the herbicides listed on this label.

GENERAL PRECAUTIONS AND RESTRICTIONS

EQUIPMENT

PARAQUAT SL HERBICIDE™ is corrosive to aluminum. Thoroughly flush all aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift with water immediately after use.

The activity of PARAQUAT SL HERBICIDE™ may be reduced in dry areas where dust stirred up by high winds or equipment tires can coat weed or plant leaves. Therefore, avoid applications in extremely dusty conditions.

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PB

LIMITATIONS AND PRECAUTIONS

- Unless otherwise indicated, PARAQUAT SL HERBICIDE™ will severely injure or kill crop plants emerged at time of application if they come in contact with sprays.
- Do not pasture livestock in treated fields or feed treated foliage in cotton when this product is used as a cotton harvest aid.
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- Do not apply to soils lacking clay minerals such as peat, muck, pure sand, artificial planting media for preplant and preemergence (to the crop) uses.
- To enable maximum weed and grass emergence prior to treatment, seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible.
- Avoid disturbing soil when seeding or transplanting.
- Transplanted plants may become damaged when they come in contact with plastic mulch used for preplant weed control and that has been treated with this product. To prevent damage to the crop, sufficient wash-off such as rainfall or sprinkler irrigation prior to planting may be needed.
- PARAQUAT SL HERBICIDE™ will be ineffective in controlling or suppressing weeds and grasses that have emerged after application.

APPLICATION INSTRUCTIONS

Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA (California only) New seedlings		Broadcast	0.7-1.3 pts. See Table 2	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> • Do not make more than one application per year. • Applications should be made during late winter or early spring. • Do not cut or harvest within 70 days after application. • Alfalfa foliage present at time of application will be burned. • Replanting may be needed due to the reduction of seedling stands. • Do not apply to seedling alfalfa grown for seed.
ALFALFA Preplant or Preemergence (No-till or conventional planting)		Broadcast or Banded Over-Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> • Do not make more than 2 applications per year. • Apply prior to emergence of the crop. Avoid disturbing soil when seeding. • Crop plants emerged at time of application will be killed.
ALFALFA Dormant season Established plantings Region A – See table at end of Alfalfa section	Weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.	Broadcast	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> • Do not make more than one application per year. • Fall regrowth: Do not apply if last fall cutting is greater than 6". Spring regrowth: Do not apply if last cutting is greater than 2". • After the crop is dormant, apply to well-established stands that are at least 1-year old. • Yield of first cutting may be reduced because alfalfa foliage present at the time of application will be burned. • Do not cut or harvest within 42 days after application. • For improved and longer-lasting weed control, tank mix with metribuzin (Lexone or Sencor). Always refer to the metribuzin label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA Dormant season Tank Mix with Velpar® L- Herbicide Region A – See table at end of Alfalfa section	Weeds including chickweed, downy brome and tansymustard.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> Do not make more than 2 applications per year. When weeds are less than 4 inches tall apply at 0.7 pt. rate PARAQUAT SL HERBICIDE™ Mix PARAQUAT SL HERBICIDE™ with 1-2 qts. of Velpar L per acre. Use lower rate of Velpar L on loamy sands or sandy loams. Always refer to the Velpar L label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. During the dormant season, make one application to established alfalfa stands. Fall regrowth: Do not apply if last fall cutting is greater than 6", Spring regrowth: Do not apply if last cutting is greater than 2". Do not apply to alfalfa during the first season after seeding. Temporary chlorosis may occur on alfalfa regrowth. Increased chances of crop injury may occur due to stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought or frost. DO NOT USE on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result. Do not cut or harvest within 42 days of application.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA						
Dormant Season	Including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> Do not make more than one application per year. Applications should be made before first spring cutting and during late fall or winter months after the last fall cutting. California: Do not apply if spring regrowth after grazing or cutting is more than 2 inches in Orange and Riverside counties, and all counties north of these counties. All other areas within Region B: Do not apply if regrowth after grazing or cutting is more than 2 inches. Do not harvest within 60 days of application. Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at time of application will be bumed. If there is a severe weed infestation, total hay yield of first cutting may be reduced in alfalfa fields and the reduction is typically directly proportionate to the loss of weed weight. For improved and residual weed control in dormant established (at least 1-year-old) alfalfa, tank mix with metribuzin (Lexone or Sencor). Do not apply tank mix with metribuzin on alfalfa that is less than 1-year-old. Always refer to metribuzin label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
On established plantings: Region B – See table at end of Alfalfa section.		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
On fall-seeded newly established stands less than 1-year-old: Region A – See table at end of Alfalfa section		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
On fall-seeded newly established stands less than 1-year-old: Region B – See table at end of Alfalfa section	California: Desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.	Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	California <ul style="list-style-type: none"> If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA (East of the Rocky Mountains) Between-cuttings treatment in established plantings. (Includes first year alfalfa)	Broadcast	0.7 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Control of weeds beyond the seedling stage and weed stubble cut off during harvest are less affected by this treatment. Make applications immediately after alfalfa has been removed for hay or silage. Do not treat more than 5 days after cutting. A reduction in first year alfalfa stands and yields may occur if alfalfa is allowed to regrow more than 2 inches. Burning of alfalfa foliage will occur at time of application. Weed control may be reduced where moisture is limited such as in arid climates. Do not cut or harvest within 30 days of application. Apply as needed up to three times during the growing season in addition to a dormant application. Do not make more than 2 applications during the first growing season of first-year alfalfa.
ALFALFA (For use only in the following states: ID, MT, NV, OR, UT, WA, WY) Desiccation of alfalfa to aid harvesting alfalfa seed	Broadcast	1.7-2.7 pts.	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not harvest until at least 4 days after application. Do not apply when weather conditions favor drift from treated areas. Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds. Use only on fields in production of alfalfa seed. Do not use on fields producing alfalfa for livestock feed. Do not use any portion of the treated field for human or animal feed, including seed, seed screenings, hay forage, or stubble.
PARAQUAT SL HERBICIDE™ /Reglone Tank Mix	Broadcast	1.3-2.7 pts. PARAQUAT SL HERBICIDE™/ 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	<ul style="list-style-type: none"> Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops. Do not use treated alfalfa seed for sprouting. Tag all alfalfa seed treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix at processing plants with, "NOT FOR HUMAN CONSUMPTION". The grower is responsible for notifying the processing plants of any seed crop treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix. Remove ALL PARAQUAT SL HERBICIDE™ /Reglone treated alfalfa seed screenings from the feed market because all screenings from alfalfa seed processing are prohibited from feed channels.

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ALFALFA : New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only).		
For Control of:	Rate/Acre*	
	For Suppression	For Control
Annual Bluegrass	--	10.7-21.3 fl. oz.
Chickweed	--	10.7-21.3 fl. oz.
Fiddleneck (6 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.
Red Maids (6 inches tall or less)	--	10.7-21.3 fl. oz.
Shepherdspurse	10.7-21.3 fl. oz.	--
Spikeweed (4 inches tall or less)	5.4 fl. oz.	10.7-16.0 fl. oz.
Volunteer Small Grain (8 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.

*Use the 5.4 fl. oz. rate only when alfalfa has at least 3 trifoliate leaves; use the 10.7 fl. oz. rate only when alfalfa has 6 trifoliate leaves; or use rates over 10.7 oz. only when there are 9 trifoliate leaves.

Alfalfa – Regions

REGION A
Alaska California: Counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumas, Sierra, Nevada. Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming

REGION B
Alabama Arizona Arkansas California: All other counties not listed in Region A. Florida Georgia Hawaii Louisiana Mississippi New Mexico North Carolina Oklahoma South Carolina Tennessee Texas

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALMONDS	Directed Spray	0.8-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Avoid allowing spray to contact green stems (except suckers) or foliage. When spraying around young trees, use a shield or wrap plant. Do not graze treated areas and do not feed cover crops grown in treated areas to livestock. Do not apply when nuts to be harvested are on the ground. Retreatment or spot treatments may be necessary for mature woody weeds, perennial weeds, late germinating weeds and green suckers.
ARTICHOKE (GLOBE)	Directed Spray	1.7-2.7 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed 8 pts. per season. Applications must be made at least 7 days apart. Do not harvest within 24 hours of last application.
ASPARAGUS	Preplant or Preemergence Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Application should be made prior to emergence of the crop. Emerged asparagus at time of application will be killed.
ASPARAGUS Preemergence to established plantings at least 2 years old.	Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made prior to emergence of the crop or after last harvest. Emerged asparagus at time of application will be killed.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
BEANS, DRY NOT FOR USE IN CALIFORNIA Sweet lupin White sweet lupin White lupin Grain lupin Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Tepary beans Urd beans Guar PEAS, DRY NOT FOR USE IN CALIFORNIA Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas Catjang	Harvest-Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic spreader at 1 qt./100 gals. of spray mix. Use a single application of the higher rate for vining type of beans or bush type of lush growth. May also be applied as a split application and may improve vine coverage. However DO NOT make more than 2 applications per year or exceed a total of 1.3 pints per acre. Apply when at least 80% of the pods are yellowing and mostly ripe and when leaves are no more than 40% green of bush type peas or beans or 30% of vine type peas or beans are green. DO NOT apply when weather conditions favor spray drift. To reduce drift, a drift control agent may be included. Not registered for use on dry beans and dry peas in California.
BERRIES Blackberry Blueberry Boysenberry Currant Elderberry Gooseberry Huckleberry Loganberry Raspberry	Postemergence Directed Spray	1.3-2.7 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. New canes or shoots can be injured. Therefore, apply before their emergence. To prevent crop injury from spray mist, apply as a coarse spray.




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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CACAO	Directed Spray	1.3-2.7 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Apply when weeds are succulent and growth is from 1-6". Retreatment or spot treatments may be necessary for mature woody weeds, late-germinating weeds and grasses and for perennials. Use a shield for young trees to prevent spray from contacting cacao plants, as injury may result. Do not spray under windy conditions. Do not graze treated areas or feed treated cover crops to livestock.
CASSAVAS, TANIER & YAMS (Puerto Rico only)	Shielded Post Directed Spray	1.3 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> Cassavas and Taniers: Do not make more than 3 applications per year. Yams: Do not make more than 2 applications per year. Make applications when weeds are succulent and growth is 1-6". Prevent spray from contacting crop to prevent injury to crop. Do not spray under windy conditions. Do not graze treated areas or feed treated forage to livestock.

General Information for Chemical Fallow

- As the density of stubble, crop residue or weeds increases, use higher spray volumes for better coverage.
- To control volunteer wheat or downy brome, fall-applied treatments generally work best with PARAQUAT SL HERBICIDE™. If possible, tank mix with Atrazine for maximum burndown and residual control.
- Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.
- Before applying PARAQUAT SL HERBICIDE™, cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest.
- The addition of dicamba (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds. Always refer to the product label(s) for 2,4-D ester (Low Volatile), dicamba (Banvel), or residual herbicide for rates of applications, directions for use, limitations, and restrictions.
- It is permissible to tank mix with registered residual herbicide combinations other than those listed for extended weed control during the fallow period.
- Weeds and grasses emerging after application and weeds taller than 6 inches will not be controlled.
- Crop plants emerged at the time of application will be killed.
- The minimum total spray per acre allowed is 5 gallons for ground and 5 gallons for air applications.
- Apply 5-60 gallons spray mix per acre by ground application. When applying at <10 GPA by ground:
 - Do not apply with floaters or exceed a speed of 10 mph.
 - Apply with flat fan nozzles at 30-40 psi.
 - Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./acre.
 - By air: apply in 5-10 gals. of spray mix per acre.


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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Continuous Wheat 2-3 Month Recropping Interval	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply at least 45 days before seeding. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow".
CHEMICAL FALLOW Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Spray before weeds produce seeds. Control of volunteer wheat and downy brome increases when applications are made late August or early September. For improved burndown and residual control of weeds, tank mix with Atrazine, Marksman® Herbicide, or Command® Herbicide. For burndown and residual control of grass and broadleaf weed tank mix with metribuzin (Sencor 75DF). Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions. Refer to the section "General Information for Chemical Fallow".
CHEMICAL FALLOW Wheat-Fallow-Wheat Rotations (Spring applied: seeded 3-5 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To conserve moisture, application should be made March 1 to April 15, prior to spring rains. Even though moisture loss is greater when applications are made after the boot stage, volunteer wheat is easier to control after this stage. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow". For burndown and residual control of grass and broadleaf weeds, tank mix with metribuzin, (Sencor 75DF/Lexone). Always refer to the label for metribuzin (Sencor 75DF/Lexone) for rates of applications, directions for use, limitations, and restrictions.
CHEMICAL FALLOW Wheat-Annual Crop¹-Wheat Rotations (Fall applied in wheat stubble)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For improved burndown and residual weed control, tank mix with Atrazine or Marksman. Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions. Make applications after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before seed production. Applications made late August to November help control volunteer wheat and downy brome. Refer to the section "General Information for Chemical Fallow".

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop ¹)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For enhanced burndown and residual weed control, tank mix with Atrazine. Always refer to the respective product label(s) for Atrazine for rates of applications, directions for use, limitations, and restrictions. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow". Refer to the Atrazine label for recommendations pertaining to soil pH and recropping intervals.

¹Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.


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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CLOVER AND OTHER LEGUMES Including velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch. Dormant Season On established plantings: Region A – See table at end of Alfalfa section. On established plantings: Region B – See table at end of Alfalfa section. On fall-seeded, newly established stands less than 1-year-old: Region A – See table at end of Alfalfa section. On fall-seeded, newly established stands less than 1-year-old: Region B – See table at end of Alfalfa section.	For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.	Broadcast	1.3-2.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> Do not make more than 1 application per year. Applications should be made during late fall or winter months after the last fall cutting and before first spring cutting. Do not apply if regrowth after grazing or cutting is more than 2". Do not harvest within 60 days of application. CAUTION: Stand and/or yield reductions may occur when applications are made to clover or other legumes that are not dormant, or have broken dormancy. Therefore, it may be necessary to replant. Burning will occur to green clover or other legumes' foliage present at the time of application. Discoloration and temporary stunting will occur in clover or other legumes foliage present at the time of application. If there is severe weed infestation, the total hay yield of first cutting may be reduced in clover or other legumes fields and is usually directly proportionate to the loss of weed weight. IN CALIFORNIA: <ul style="list-style-type: none"> If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.
	California <ul style="list-style-type: none"> Use for desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel. 	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions																						
CORN FIELD CORN POPCORN SWEET CORN SEED CORN (Used alone)	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none">Do not make more than 3 applications per year.Includes field, fresh sweet, forage, fodder and popcorn.To permit maximum weed and grass emergence, seedbeds should be formed as far ahead of planting and treatment as possible.Seeding should be done with a minimum amount of soil disturbance.Control will not occur when applications are made after weeds and grasses have emerged. However, crop plants emerged at time of application will be killed.																						
CORN Tank Mixes for No-till/Reduced Till	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.*	—	<ul style="list-style-type: none">Do not make more than 3 applications per year.Applications should be made as broadcast sprays before, during or after planting, but before crop emergence.PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control: <table><tr><td>2,4-D Ester (Low Volatile)</td><td>Harness®</td></tr><tr><td>AAtrex/Atrazine®</td><td>Harness® Xtra</td></tr><tr><td>Banvel®</td><td>Lasso® Herbicide</td></tr><tr><td>Bicep</td><td>Linex®</td></tr><tr><td>MAGNUM®</td><td>Lorox®</td></tr><tr><td>Bicep Lite II</td><td>Princep®</td></tr><tr><td>MAGNUM®</td><td>Prowl® Herbicide</td></tr><tr><td>Dual MAGNUM®</td><td>Simazine®</td></tr><tr><td>Frontier®</td><td>Surpass® EC</td></tr><tr><td>Guardsman®</td><td>Surpass® 100</td></tr><tr><td>Harmony® Extra Herbicide</td><td>Topnotch®</td></tr></table> (Preplant only) PARAQUAT SL HERBICIDE™ may also be tank mixed with Ambush® insecticide.Always refer to respective product label(s) for rates of applications, directions for use, limitations, and restrictions. <p>*Always refer to respective product label(s) to confirm if these products can be applied by air.</p>	2,4-D Ester (Low Volatile)	Harness®	AAtrex/Atrazine®	Harness® Xtra	Banvel®	Lasso® Herbicide	Bicep	Linex®	MAGNUM®	Lorox®	Bicep Lite II	Princep®	MAGNUM®	Prowl® Herbicide	Dual MAGNUM®	Simazine®	Frontier®	Surpass® EC	Guardsman®	Surpass® 100	Harmony® Extra Herbicide	Topnotch®
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Harmony® Extra Herbicide	Topnotch®																										

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SWEET CORN, SEED CORN	Postemergence Directed Spray (including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made when weeds are actively growing. Use a higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts corn plants. <p>For Hooded Or Shielded Sprayers:</p> <ul style="list-style-type: none"> Use a hooded or shielded sprayer with skids or wheel on the spray boom to maintain spray height in order to prevent excessive crop phytotoxicity. Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. <p>For Directed Spray Without Hooded Or Shielded Sprayers.</p> <p><i>Corn height is measured from soil surface to top of whorl.</i></p> <ul style="list-style-type: none"> Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks. Corn plants shorter than 10" may be injured and not recover. For corn more than 20" tall: Arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks. Injury to corn foliage will occur if sprayed. However, corn will recover and develop normally.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SEED CORN	Harvest Aid Broadcast	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than one application per year. Make ONE (1) application at least 7 days prior to harvest. Apply after the corn is mature. This is indicated by a black layer which forms at the base of the kernels. You may consult your local agricultural authority for help in identifying the black layer. Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v. To desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18" use 1.3 pts. Drought stressed plants, especially broadleaf weeds, can be difficult to kill and desiccation may not be complete.
FIELD CORN ONLY (grain, fodder, forage)	Postemergence Directed Spray USDA Witchweed Eradication Program	1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. If regrowth occurs, initiate sprays in late June to early July and repeat in early August. Follow application instructions in post-emergence directed spray section above.
FIELD CORN ONLY (grain, fodder, forage) 2,4-D Amine AE Tank Mix	Postemergence Directed Spray USDA Witchweed Eradication Program	5.4 fl. oz. +0.5 lb. 2,4-D Amine AE	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as directed spray onto grassy weeds and witchweed before witchweed blooms. If regrowth occurs, reapply. Follow application instructions in post-emergence directed spray section above. Always refer to respective product label(s) for rates of applications, directions for use, limitations, and restrictions.
COTTON (Used alone)	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply prior to, during or after planting, but before crop emergence. For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment. Seeding should be done with a minimum of soil disturbance.
COTTON (California only; Used alone)	Preplant	5.4-10.7 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Goal® Herbicide Tank Mix	Preplant or Fallow Bed Broadcast	1.7-2.7 pts.	Ground: Or Air: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Always refer to the Goal® label for weeds controlled rates of applications, directions for use, limitations, and restrictions.
COTTON Other Tank Mixes	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. For improved residual control or bumdown, PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: <ul style="list-style-type: none"> Caparol® Herbicide Cotoran® Herbicide Cotton-Pro® Herbicide Diurone® Dual MAGNUM® Harmony® Extra (Preplant Only) Meturon® Herbicide MSMA Prowl® Zorial® Herbicide When tank mixing with Cotoran DF® or Meturon DF®, follow mixing instructions carefully, maintain constant agitation and see Order of Tank Mixing section on respective labels. When tank mixing with any of the herbicides listed above, always refer to the respective product label(s) for weeds controlled rates of applications, directions for use, limitations, and restrictions.

COTTON Harvest Aid Use Restrictions

- Do not make more than 4 applications per year.
- Do not pasture livestock in treated fields or feed treated foliage.
- Do not apply to cotton within 3 days before harvest.
- Repeat application if necessary. Do not exceed a total of 1.3 pts./A as a harvest aid.
- May be tank mixed with other cotton harvest aid materials known to be effective by a local expert. Unless otherwise instructed in this label, always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.
- PARAQUAT SL HERBICIDE™ can be applied in a tank mix with methyl parathion and/or Karate® insecticide. Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.
- Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOUTHERN COTTON Harvest aid for bolls opening and defoliation (Tank mix with phosphate and chlorate defoliant)	Broadcast	5.4 fl. oz. + 1 pt. Phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Development of immature bolls will be inhibited. Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
SOUTHERN COTTON Additional tank mixes for boll opening and defoliation	Broadcast	2.1-3.3 oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 4 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with the following products to aid in defoliation and opening of mature bolls. Accelerate® Defoliant Def® Defoliant Dropp® Defoliant Ethephon® Plant Growth Regulator Folex® Defoliant Harvade® Harvest Growth Regulator Prep™ PGR Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. Always refer to the tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
SOUTHERN COTTON Post Defoliation – To aid in opening of mature bolls and to desiccate green weeds.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. If weed infestation is heavy or dense use higher rate. Apply when 75% or more of bolls are open and remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. After a defoliation or conditioning application has been made, delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking.
WESTERN COTTON Harvest aid for boll opening and early defoliation	Broadcast	3.7-5.4 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. On rank cotton, use higher rate. Do not use more than 5.4 fl. oz of PARAQUAT SL HERBICIDE™ for early defoliation as excessive desiccation may occur. Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB). Development of immature bolls will be inhibited. Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
WESTERN COTTON Harvest aid for boll opening and mid-to-late defoliation	Broadcast	5.4-10.7 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliation and/or other compatible harvest aid products.		3 (Alone)	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use the 10.7 fl. oz. rate of PARAQUAT SL HERBICIDE™ in desert cotton areas or on rank vigorous cotton. Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB). Development of immature bolls will be inhibited. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
COTTON Stripper or Spindle Harvested Harvest aid for defoliation and boll opening.	Broadcast	2.1-7.5 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature. DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED, SLICE BOLLS AND INSPECT THE SEED FOR MATURITY. PARAQUAT SL HERBICIDE™ may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant® Def Defoliant® Dropp Defoliant® Ethephone Plant Growth Regulator® Folex Defoliant® Harvade Harvest Growth Regulator® Prep™ PGR May be applied as a split application. Do not exceed a total of 1.3 pts./A. To avoid leaf sticking, apply PARAQUAT SL HERBICIDE™ as a desiccant approximately 3-7 days after defoliant or a conditioning application and 7-14 days before harvest. Cooler temperatures may cause a longer waiting period between application of PARAQUAT SL HERBICIDE™ as a desiccant and defoliation/conditioner. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Late season desiccation	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. May be applied as a split application. Do not exceed a total of 1.3 pts./A. Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB). Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking if a defoliation or conditioning application has been made. May be tank mixed with other harvest aid materials known to the local expert to be effective.
COTTON Desiccation of Regrowth	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use to desiccate regrowth occurring after defoliation or desiccation. Because regrowth is difficult to control thorough coverage with the full recommended rate is necessary. Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete. If regrowth is excessive, use higher rate.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
EASTER LILIES (Field grown)	Preemergence	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not exceed two applications per year.
FALLOW LAND Prior to planting of any crops	Preplant Broadcast to Fallow Land	1.0-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year, during the fallow period. Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes. Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges. For weeds approaching the maximum size of 6" the higher rate may be used. No more than 2 applications should be made during the fallow period. Prior to application allow maximum weed emergence to maximize the benefit of this use. Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.
GRASSES (For Seed) (For Use in Seedbed Preparation)	Preplant, At Planting, or Preemergence	1.3-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Prepare the seedbeds and allow weeds to germinate. Apply PARAQUAT SL HERBICIDE™ when weeds are at the 3-5 leaf stage. Applications may be repeated as necessary (but only up to 3 applications per year) prior to grass emergence. Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.
GUAR (Preharvest desiccation)	Preharvest	1.3 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply after the pods are fully mature. Do not graze treated areas or use the treated forage for animal feed.
GUAVA	Directed Spray	2.5 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Do not allow spray to contact green stems, fruit or foliage. Do not graze treated areas. Do not feed cover crops grown in treated areas to livestock. Retreatment or spot spraying may be necessary for mature woody weeds, late-germinating weeds and grasses, and perennials.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
HOPS (ID, OR, & WA only)	Directed Spray and/or Suckering and Stripping.	1.3 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Retreatment of spot treatment may be necessary. Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result. Do not allow animals to graze in treated hopyards. Silage and hop vine refuse may be fed to livestock. Spray only the basal 2 ft. of the vines for sucking and stripping. Repeat as necessary, but only up to 3 applications per season. Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using PARAQUAT SL HERBICIDE™ on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs. Chemical Pruning: Spray when vines are less than 3 ft. tall to burn back existing vines and obtain even emergence or subsequent vines APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.
LENTILS NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.	Harvest Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume. May also be applied as a split application. DO NOT make more than 2 applications or exceed a total of 1.3 pts./A. The split application may improve coverage. Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color. DO NOT apply when weather conditions favor spray drift. To reduce spray drift a drift control agent may be included.
MINT (Peppermint, Spearmint)	Dormant Season	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For suppression of weeds such as, groundsel, chickweed, downy brome, bluegrass, Italian ryegrass, prickly lettuce. Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall. Do not apply more than 2.0 pts./A per dormant season. May be tank mixed with Sinbar® Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Always refer to the Sinbar® (terbacil) label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ONIONS (seeded) AND GARLIC	Preplant/ Preemergence	1.7-2.7 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> Do not make more than 1 application per year. For heavy weed infestations or wild oat control use the higher rate. Apply only one application per season at the 2.7 pts./A dosage. Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence. Apply a maximum of 2.7 pts./A per season.
PASSION FRUIT	Directed Spray	2.5 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. If bark is still green at application time, use a shield or wrap vine. Pick all fruit off the ground prior to application if application is to be made during harvest season. Do not allow animals to graze on treated areas. It may be necessary to retreat or spot treat.
PEANUTS	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack. For at ground crack use, PARAQUAT SL HERBICIDE™ can be tank mixed with Pursuit® Herbicide or Dual MAGNUM® for residual weed control. Always refer to the Pursuit® or Dual MAGNUM® label for a list of weeds controlled, application rates, necessary precautions, and use limitations. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Do not apply by air.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PEANUTS Basagran® Herbicide Tank Mix	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Tank mix PARAQUAT SL HERBICIDE™ with Basagran® at 1 pt./A. for improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida. This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Always refer to the Basagran® label for weeds controlled rates of applications, directions for use, limitations, and restrictions. If peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment do not apply this tank mix as injury may be enhanced and/or prolonged. During prolonged periods of drought or unseasonably cold weather do not apply this tank mix as unsatisfactory weed control may result. Do not apply by air.
PEANUTS Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	Broadcast Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix PARAQUAT SL HERBICIDE™ with 8-16 oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200. Do not apply a total of more than 10.8 fl. oz. of product per season and make no more than 2 applications per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Always refer to the Butyrac® or Butoxone 200® labels for weeds controlled rates of applications, directions for use, limitations, and restrictions. Do not apply by air.
PIGEON PEAS (Puerto Rico only)	Directed Spray	1.3 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> Do not make more than 1 application per year. Avoid contact with pigeon pea foliage. Do not make more than 1 application per season. Do not graze treated areas or feed treated forage to livestock. Cannery waste can be fed to livestock.
PINEAPPLE	Directed Spray	1.3-2.7 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> Do not exceed 3 applications per season. More mature weeds may require retreatment.
POTATO	Preplant or Preemergence Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply up to ground cracking stage, before potatoes have emerged.
POTATO (California, Washington, Oregon, Idaho only; used alone)	Preplant Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
POTATO Fresh Market Only Preharvest vine killing and weed desiccation. For Use Only in the states of: Colorado, Delaware, Idaho, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Utah, Washington, Wisconsin and Wyoming	Broadcast	0.7-1.3 pts.	Ground: 20 gals.	3	For Fresh Market Potatoes Only. (Fresh Market Potatoes include potatoes that are sent directly from the field to a consumer, grocery store, or processor for use.) <ul style="list-style-type: none"> Do not make more than 2 applications per year. DO NOT use on potatoes that will be stored as tuber decomposition may result. Potatoes must be harvested promptly after desiccation and processed or consumed immediately. DO NOT apply to drought stressed potato vines. DO NOT use to desiccate the vines of seed potatoes as seed pieces may fail to germinate and grow normally. DO NOT pasture livestock in treated potato fields. DO NOT exceed 2.6 pts./A per season. Begin application when leaves begin to turn yellow. Immature potato foliage is tolerant to PARAQUAT SL HERBICIDE™. However, desiccation will not be complete under this condition. Use 1.3 pts./A rate where quick vine kill is desired. For dense vine growth, use 2 applications of 0.6 pt/A. Split applications must be applied a minimum of five days apart.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
RICE	Preplant or Preemergence Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. When vegetation is dense, use higher rates and spray volumes. Seeding should be done with a minimum amount of soil disturbance. PARAQUAT SL HERBICIDE™ will not control weeds and grasses emerging after application. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved or extended weed control. Always refer to the tank mix herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.
SAFFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during and after planting but before crop emergence.
SAFFLOWER (California only)	Preplant Broadcast	0.7 pt.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.
SMALL GRAINS (Barley, wheat)	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year.
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. A tank mix with Hoelon® 3EC will improve grass control. Apply when weeds are actively growing and 1-6" in height. Weeds 6 inches or taller may not be controlled. Do not apply this tank mix to barley as crop injury may result. Always refer to the Hoelon® 3EC label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain)	Preplant/ Preemergence Broadcast or Band	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum weed and grass emergence seedbeds should be formed as far ahead of planting as possible Seeding should be done with a minimum amount of soil disturbance.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SORGHUM (Grain) Atrazine & 2,4-D ester [Low Volatile] Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.		48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may assist in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Always refer to the specific tank mix herbicide label(s) for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain) Harmony® Extra Herbicide Tank Mix	Preplant	1.3-2.5 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For Improved weed control, PARAQUAT SL HERBICIDE™ may be tank mixed with Harmony Extra. Always refer to the Harmony Extra label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain)	Postemergence Directed (Including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when weeds are actively growing. Use higher rate on larger on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts sorghum plants. Do not exceed 2 postemergence-directed applications or exceed a total of 5.3 pts. PARAQUAT SL HERBICIDE™ per season. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height. Apply by directing spray between the rows and by using hooded or shielded sprayers to prevent spray contact with crop plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply when sorghum is at least 12" tall when naturally standing. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray. Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.

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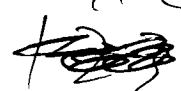
Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed a total of 4.0 pts. Of PARAQUAT SL HERBICIDE™ per season. Apply as a broadcast spray before, during or after planting, but before crop emergence. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control: <ul style="list-style-type: none"> 2,4-DB Lorox Canopy Lorox Plus Dual MAGNUM Prowl Goal Pursuit Herbicide Harmony Extra Scepter Herbicide (Preplant Only) Sencor Herbicide Lasso Surflan® Herbicide Lexone Turbo Herbicide Linex The rate of PARAQUAT SL HERBICIDE™ to be used in these tank mixtures is dependent on weed height and growing conditions. Where weed canopy is dense or under dry conditions use the highest recommended rate of PARAQUAT SL HERBICIDE™. Always refer to the respective product label(s) for a list of weeds controlled, rates of applications, directions for use, limitations, and restrictions. The lower application rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting. Seeding should be done with a minimum amount of soil disturbance. Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).
SOYBEANS 2,4-D ester (Low Volatile) Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting. Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting. Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not able to accept the results of soybean injury including possible loss of stand and yield. Do not use amine formulation as PARAQUAT SL HERBICIDE™ activity may be reduced. May be tank mixed with residual herbicides listed above. Always refer to the 2,4-D ester (Low Volatile) label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Postemergence Directed Spray (Includes Hooded or Shielded)	3.0-5.3 fl. oz.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply when weeds are actively growing. Use the lower rate of PARAQUAT SL HERBICIDE™ for control of seeding johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2" tall. For control of 2-4" red rice, <i>Brachiaria</i>, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 5.3 fl. oz of PARAQUAT SL HERBICIDE™. Use 5.3 fl. oz. of PARAQUAT SL HERBICIDE™ for control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed. Apply PARAQUAT SL HERBICIDE™ at 5.3 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-D formulation for control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice. Always refer to the 2,4-D label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not graze or harvest for forage or hay. If necessary, make a second and final application 7-14 days later. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. Use higher rate on larger (less than 6") on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray intentionally or accidentally including drift of fine droplets) contacts the plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Do not treat on soybeans that are less than 8" tall. Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Some crop injury will occur. The degree of injury is dependent upon the precision of application and spraying conditions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Harvest Aid	5.4-10.7 fl. oz.	Ground: 20 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Indeterminant varieties: Applications should be made when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, ½ of leaves have dropped, and remaining leaves are yellowing. Injury will occur on immature soybeans. Mature cocklebur, especially drought-stressed plants, are tolerant to PARAQUAT SL HERBICIDE™ and desiccation will not be complete. Always use the higher rate when treating cocklebur. Do not apply within 15 days of harvest. Do not graze or harvest for forage or hay.
STRAWBERRIES	Postemergence Directed Spray	1.3 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Direct spray between the rows, using shields to prevent spray contact with crop plants. Do not allow spray to contact strawberry plants as injury or excessive residues may result. Do not apply more than 3 times per season. Do not graze livestock in treated areas.
SUGAR BEETS	Preplant or Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For heavier weed infestations use the higher label rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. Can be used in fallow bed/stale seedbed for weed control. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SUGARCANE	Postemergence Directed Spray (includes Hooded or Shielded)			—	General Comments <ul style="list-style-type: none"> Do not make more than 2 applications per year, except applications made by air in Florida and Texas in which the maximum number of applications allowed is 1 per year. Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction. If necessary, a second and final application can be made when new weed growth is 2-6" high. Do not graze treated areas or feed treated forage to livestock.
--Florida--		1.3 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Optimum results can be obtained by applying in early spring (March-April) when weeds are small. Do not apply after June 1, as cane growth may be stunted and yields reduced.
--Hawaii--		1.3 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not apply after cane rows have closed in.
--Louisiana--		0.7-2.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For tiller control, apply when tillers are less than 18" high. For heavier weed infestations or tiller growth use the higher rate.
--Florida & Texas--	Harvest Aid	0.4-0.7 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 1 application per year. Under cool, cloudy weather conditions use higher rate. Apply 3-14 days before burning and harvest.
SUNFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7- 2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during, or after planting but before crop emergence.
SUNFLOWER	Preharvest Desiccation Broadcast	0.8-1.3 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this is equivalent to the time when the back of the heads are yellow and the bracts are turning brown. Do not graze treated areas or feed treated forage to livestock. When crop stands or weed infestations are heavy, use the higher label rate.
TARO, DRYLAND (Hawaii Only)	Postemergence Directed Spray	1.3-2.1 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not allow spray to contact the taro plants as injury may result. Make the first application when weed growth is 1-4" high. Weeds emerging after the application will not be controlled. A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.
TREE PLANTATION ESTABLISH-MENT Deciduous and Conifers	Preplant Broadcast	1.3-2.7 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum emergence of weeds prepare ground early. Apply prior to planting. Plant with minimal soil disturbance. For heavier weed infestations, use the higher application rate. For improved burndown or residual control, tank mix PARAQUAT SL HERBICIDE™ with other herbicides labeled for this use. Always refer to the specific tank mix herbicide label(s) for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not apply in less than 20 gals./A as weed control will be reduced.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Orchards, Vineyards, Windbreak, Shade & Ornamental Trees: Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pistachios Plums Prunes Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arborvitae, ash, elm, fir, oak, pine, etc.	Directed Spray	1.7- 2.7 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. Do not allow spray to make contact with green stems (except suckers), fruit or foliage. Use the shield or wrap plant when spraying around young trees or vines. Do not graze treated areas. Do not feed covered crops grown in treated areas to livestock. Do not apply when figs, nuts or olives to be harvested are on the ground. For apricots – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For cherries – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For figs – Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season. For grapes – treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage. For kiwi fruit – Do not treat more than 3 times per year. For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary. For nectarines – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For olives – Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season. For peaches – Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season. For pistachios – Do not exceed 2 applications after shells split. For plums – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Tank Mixes	Directed Spray	1.7-2.7 pts.	Ground: 10 gals.	Always refer to other Tank Mix labels	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. PARAQUAT SL HERBICIDE™ may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: Devrinol® Herbicide Goal® Karmex® Krovar® Herbicides Princep® Sinbar® Solicam® Herbicide Surflan® Always refer to other herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
TYFON (New Hampshire only)	Preplant Preemergence	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seeding should be done with a minimum of soil disturbance. Weeds and grasses emerging after treatment will not be controlled. Crop plants emerged at time of application will be injured.
VEGETABLES (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Gherkin Gourd, Edible Groundcherry Lettuce Momordica spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	Preplant Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence. Banded or broadcast treatment applications can be made before, during or after planting but prior to the crop emergence. For heavier weed infestations, use the higher rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal®. Always refer to the Goal® label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not harvest tomatoes within 30 days after application.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
VEGETABLES Eggplant Tomatoes Peppers	Directed Spray	1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control or suppression of emerged weeds between rows after crop establishment. Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure. Do not spray under conditions which may cause excessive drift. Apply when weeds are succulent and weed growth is less than 6". Do not apply more than 3 applications per season. Do not allow animals to graze in treated areas. Do not harvest tomatoes within 30 days after application.
VEGETABLES Tomatoes	After Final Harvest	1.6-2.5 pts.	Ground: 40-120 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply in 40-120 gallons of water per acre (0.62-0.93 lb. a.i./A). Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. spray solution). To ensure maximum herbicide burndown tomato vines should be thoroughly covered. PARAQUAT SL HERBICIDE™ may be deactivated and less efficacious when dirty or muddy water is used. To aid in the removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently. DO NOT apply more than a total of 3 lbs. active ingredient (paraquat) per acre per season. To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For control of volunteer barley in preformed seedbeds. Do not harvest tomatoes within 30 days after application.
VEGETABLES Rhubarb	Dormant	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not exceed 2 applications per year. Apply during dormant season before buds in crown begin to grow.

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RESIN SOAKING

Pines including Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines.

Tree Selection – Trees should be selected from stands on sites not subject to stress from periods of extreme drought because the desiccating effect of PARAQUAT SL HERBICIDE™ is accentuated during drought, causing a reduction in the amount of oleoresin deposited in the xylem. Vigorous, non-stagnated natural or planted stands should be selected. Plan PARAQUAT SL HERBICIDE™ treatments in stagnated or commercial timber stands, not sooner than three years after a commercial thinning.

Application Directions – To bring the treatment into contact with sapwood (or xylem), apply water-diluted PARAQUAT SL HERBICIDE™ to an appropriate wound in the tree trunk.

Bark Streaks or Cuts: Use a standard or rotary bark hack or a chainsaw shipping tool (used in naval stores work) to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. Do not exceed 1/3 of the circumference of the tree. Serious girdling of the trunk and premature death of the tree can result if multiple streaks or cuts are made. Apply a coarse spray (about 1.7-5.0 ml) PARAQUAT SL HERBICIDE™ solution (1-5% cation, wt./wt. basis) to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak. For example, for a 9-inch diameter tree, using 3 ml of 2 or 4% PARAQUAT SL HERBICIDE™ solution will cover the 1-inch wide streak and will result in application of 60 or 120 mg per streak.

Time of Treatment: Less severe pine beetle infestations and longer tree life usually result during cool season treatments under non-drought seasons. However, resin soaking can occur from treatments made any time of the year.

Interval between Treatment and Tree Harvest: There should be at least a 6-month interval between application of PARAQUAT SL HERBICIDE™ and tree harvest. However it is preferable the interval is from 12-24 months, even though intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks possibly making early harvest necessary. With this treatment, there is a potential for promoting beetle attack or causing premature death of the tree. At high dosage rates, desiccation of the xylem tissue, rather than the desired resin soaking, may occur.

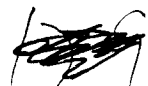
Note: This type of treatment may reduce stem growth during the period between treatment and tree harvest.

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Dilution Table for PARAQUAT SL HERBICIDE™ (3.0 lbs. cation per gallon)	
Concentration of Cation Desired (Wt./Wt. Basis)	Add the Following No. Gal. of Water to $\frac{2}{3}$ Gallon of PARAQUAT SL HERBICIDE™
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs)	Broadcast	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved emerged weed control or extended weed control. Always refer to the tank mix herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
NONCROP USES	Broadcast or Spot Treatment	1.7- 2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Repeat applications as necessary but do not make more than 10 applications per year. To be used in noncrop areas including public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, and fence lines. Avoid spray contact with the foliage of ornamentals or desired plants.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendati on	<ul style="list-style-type: none"> Do not make more than 3 applications per year. West of Cascade and Sierra Nevada Mountains <ul style="list-style-type: none"> Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth. Apply on moderately to heavily grazed areas for best seeding results. Do not use in heavy sod and weed growth areas. East of Rocky Mountains <ul style="list-style-type: none"> Use the 1.3 pts rate on vigorous or coarse sod species such as brome grass. Apply prior to, or at time of seeding grasses or forage legumes. Apply only to grazed or mowed pastures not more than 3" in height at time of treatment. Bermudagrass or Bahiagrass Sods <ul style="list-style-type: none"> Apply in late summer or early fall to sod not exceeding 3" in height. For control of emerged Little Barley, apply in February or March before the mid-boot stage of Little Barley. Bermudagrass and Coastal Bermudagrass Pastures <ul style="list-style-type: none"> Apply when bermudagrass is dormant. For control of little barley, apply before the mid-boot stage. Do not mow for hay until 40 days after treatment.
For Control of Endophyte- Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	Broadcast (Split Application)	0.7-1.3 pts. followed by 0.7-1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Use split applications of 10-21 days apart if necessary. Do not exceed 2.6 pts./A total in preparation for reseeding. For spring plantings, the initial application of 0.7-1.3 pts. may be made the previous fall. Apply when fescue is actively growing and no more than 4" high. To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.

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PARAQUAT SL HERBICIDE™

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
*For Prickly Pear Desiccation in Pastures **Not for use in California	Spot Sprays	0.8 fl. oz. per gallon of water	Spray to wet weed foliage	--	<ul style="list-style-type: none"> Do not make more than 10 applications per year. Hand-held equipment such as knapsacks, backpack sprayers, pump-up pressure sprayers, hand-guns, and handwands, can be used to direct the spray onto weed foliage so that the spray thoroughly wets foliage. Mix 0.8 fl. oz. of PARAQUAT SL HERBICIDE™ and 1/3 fl. oz. of a nonionic surfactant per gallon of water. Completely and uniformly cover all green prickly pear foliage with spray. Apply in May through September for best desiccation results. Do not use more than 1.6 pts. of PARAQUAT SL HERBICIDE™ per acre per year. Apply only to pastures with no more than 3" of height at time of treatment. Tank mix with Grazon® P+D Specialty® herbicide at a rate of 1-2 fl. oz. per gallon of water for improved desiccation and perennial control of Prickly pear. Always refer to the Grazon® P+D Specialty herbicide label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
*For Juniper Species leaf moisture reduction or desiccation prior to <u>Prescribed</u> burning of pastures *Not for use in California	Broadcast	1.3 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 10 applications per year. Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists. Apply during hot, dry weather conditions (generally July and August). Use 2% v/v nonionic surfactant in a minimum of 5 gal. spray solution. Monitor Juniper leaf moisture content. Maximum leaf moisture reduction generally occurs 3-4 weeks after PARAQUAT SL HERBICIDE™ application. Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns. Reduction in leaf moisture can be adversely affected by cool or humid weather conditions. Do not graze livestock after application or prior to burning.
*Native Pastures ** Not for use in California	Broadcast	1.0-1.25 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply PARAQUAT SL HERBICIDE™ for control of Downy and Japanese Brome. Apply in spring after 90% node formation of brome species, but before full bloom. Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season. Do not apply more than 1.25 pts. PARAQUAT SL HERBICIDE™ per year. Apply only to pastures with no more than 3" of height at time of treatment.

Conversion Table PARAQUAT SL HERBICIDE™ to Be Applied			
Ounces	Pints	Lb. a.i.	Acres/Gallon
2.5	0.16	0.06	51.3
4.8	0.30	0.11	26.7
5.28	0.33	0.12	24.2
5.52	0.35	0.13	23.2
10.00	0.63	0.23	12.8
11.00	0.69	0.26	11.6
11.20	0.70	0.26	11.4
12.00	0.75	0.28	10.7
16.00	1.00	0.38	8.0
20.00	1.25	0.47	6.4
20.80	1.30	0.49	6.2
24.00	1.50	0.56	5.3
28.00	1.75	0.66	4.6
32.00	2.00	0.75	4.0
40.00	2.50	0.94	3.2
43.20	2.70	1.00	3.0

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WARRANTY STATEMENT

SINON USA, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. To the extent allowed by law, all such risks shall be assumed by Buyer and User. To the extent allowed by law, the exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product. SINON USA, Inc. makes no warranties of merchantability or of fitness for a particular purpose or for any other expressed or implied warranty except as stated above.

AAtrex®, Ambush®, Bicep MAGNUM®, Bicep Lite II MAGNUM®, Caparol®, Cyclone®, Devrinol®, Dual MAGNUM®, E-Z Handler®, Karate®, Princep®, Reglone®, Solicam®, Surpass®, TopNotch®, Zorial® and the Syngenta logo are trademarks of a Syngenta Group Company

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Ethephon® is a trademark of Micro Flo Company, LLC

Folex® is a trademark of AMVAC Chemical Corporation

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Harvade® is a trademark of Chemtura

Harness®, Lariat® and Lasso® are trademarks of Monsanto Agricultural Company

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Manufactured by: Sinon USA, Inc.
1080 Carol Lane, Suite 264
Lafayette, CA 94549

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United States
Environmental Protection Agency
 Office of Pesticide Programs (750SC)
 Washington, DC 20460

Notice of Supplemental Distribution of a Registered Pesticide Product

Instructions

After a registrant has obtained final registration for the basic product, the registrant may then supplementally distribute his/her product. One form must be submitted for each distributor product and must be signed by the distributor involved. The basic registration number and the distributor company number must be shown.

If a registrant has a potential distributor who does not have a company number assigned, she/he should have the distributor apply, on letterhead stationery, to the Registration Division to have a number assigned prior to submitting this form to the agency.

This Notice of Supplemental Distribution must be submitted by the basic registrant. The completed form must have the concurrence and signature of both the registrant and the distributor.

EPA Registration Number of Product
 2557-1

Distributor Company Number
 400

Note: Do not submit distributor product labels

Name of Registered Product (basic product name accepted by EPA)
 Paraquat SL Herbicide™

Distributor Product Name
 FIRESTORM™

Name and Address of Distributor (Type; include ZIP code)

Chemtura USA Corporation
 74 Amity Road
 Bethany, Connecticut 06524

Read All Conditions Before Signing

1. The distributor product must have the same composition as the basic product.
2. The distributor product must be manufactured and packaged by the same person who manufactures and packages the registered basic product.
3. The labeling for the distributor product must bear the same claims as the basic product, provided, however, that specific claims may be deleted if by doing so, no other changes to the label are necessary. The product must remain in the manufacturer's unbroken container.
4. The label must bear the EPA registration number of the basic product, followed by a hyphen and the distributor's company number.
6. Distributor product labels must bear the name and address of the distributor qualified by such terms as "packed for...", "distributed by...", or "sold by..." to show that the name is not that of the manufacturer.
7. All conditions of the basic registration apply equally to distributor products. It is the responsibility of the basic registrant to see that all distributor labeling is kept in compliance with requirements placed on the basic product.

Distributor

We intend to market our product under the Distributor Product Name specified above, subject to the conditions specified on this Notice.

Signature and Title of Distributor

[Signature] Global Project Manager

Date

31st January 2006

Registrant

I agree that the distributor named above may distribute and sell the Distributor Product specified above, subject to the conditions specified on this Notice.

Signature and Title of Registrant

[Signature] Vice President

Date

January 27, 2006



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505C)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg.
Number:

82557-1

Date of Issuance:

January 25,
2006

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration

(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Parquat SL Herbicide

Name and Address of Registrant (include ZIP Code):

Sinon USA Inc.
1080 Carol Lane, Suite 264
Lafayette, CA 94549

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

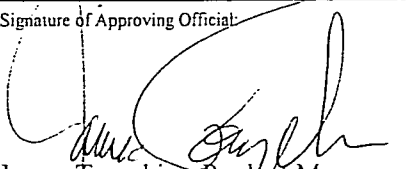
Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is registered in accordance with FIFRA section 3(c)(5).

This registration will expire automatically, without opportunity for a hearing, upon the issuance of a cancellation order for EPA Reg. No. 100-1074. The registrant will be subject to the same conditions as contained in the cancellation order issued on that date for EPA Reg. No. 100-1074. The cancellation order for EPA Reg. No. 100-1074 will not be issued before April 26, 2006."

Submit the outstanding product chemistry data requirements 830.6317 (Storage Stability) and 830.6320 (Corrosion Characteristics) within 1 year from the date on this registration letter:

Signature of Approving Official:


James Tompkins, Product Manager (25)
Herbicide Branch, Registration Division (7505C)

Date:

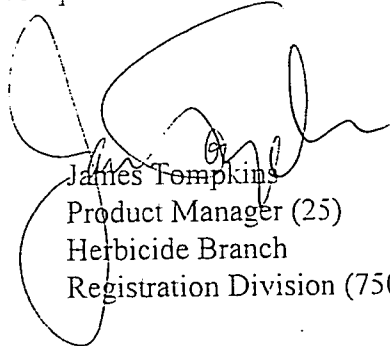
January 25, 2006

Make the following label changes before you release the product for shipment

1. Change EPA Reg. No. on label from 82557-R to 82557-1.
2. Add an appropriate EPA Establishment number to the label.
3. On page 3, in the PRECAUTIONARY STATEMENTS, add "Harmful if absorbed through skin." before "Avoid contact with skin."
4. On page 19, in the General Information for Chemical Fallow section, add the following statement "The minimum total spray per acre allowed is 5 gallons for ground and 5 gallons for air application."
5. On page 40, in the section SUNFLOWER- Preplant or Preemergence Broadcast or Banded Over Row, in the Rate Column change "1.7- .2.7 pts" to "1.7- 2.7 pts."

You will submit one (1) copy of your final printed labeling before you release the product for shipment. A stamped copy of labeling is enclosed for your records.

If you have any questions, please contact Hope Johnson at 703-305-5410.



James Tompkins
Product Manager (25)
Herbicide Branch
Registration Division (7505C)

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RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS
UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED
BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

PARAQUAT SL HERBICIDE™

Defoliant and desiccant herbicide
for the control of weeds and grasses and as a harvest aid.

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID.
- SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE STENCHING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'- Bipyridinium dichloride) 43.8%

Other Ingredients: 56.2%

Total: 100.0%

Contains 3.0 pounds paraquat cation per gallon as 4.143 pounds salt per gallon. Contains stench (odor) and emetic.

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO



POISON

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

EPA Reg. No. 82557-R

EPA Est.:

Net Contents:

ACCEPTED
with COMMENTS
in EPA Letter Dated

JAN 25 2006

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

82557-1

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[FRONT PANEL CONTINUED]

FIRST AID Contains Paraquat, a Bipyridinium Herbicide Have the product or label with you when calling a poison control center or doctor, or going for treatment.	
If swallowed	<ul style="list-style-type: none">• Call a poison control center or doctor IMMEDIATELY for treatment advice.• SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an absorbent such as activated charcoal, bentonite or Fullers Earth.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none">• Move person to fresh air.• The odor of this product is from the stenching agent, which has been added, not from the paraquat.• If person is not breathing, call 911 or an ambulance.• Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an absorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat; however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
HOT LINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call CHEMTREC 1-800-424-9300.	

See back/side panel[s] for additional precautionary statements.

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Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER. May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist respirator. Causes irreversible eye damage. Wear protective eyewear. Do not get in eyes or on clothing. Avoid contact with skin. **IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

Personal Protective Equipment (PPE)

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Shoes plus socks
- Protective eyewear
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

Mixers and loaders must wear:

- Long-sleeved shirt and long pants
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Shoes plus socks
- Dust mist NIOSH-approved respirator with ANY N, R, P, or HE filter.
- Chemical resistant apron
- Face Shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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Environmental Hazards

This product is toxic to wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs because it desiccates all green plant tissue. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Refer to the local state laws, regulations, guidelines, and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial application during periods of thermal inversion.

Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

DIRECTIONS FOR USE

Restricted Use Pesticide. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to use of this product that are covered by the Worker Protection Standard.

For preplant or preemergence (broadcast or banded), chemical fallow, postemergence directed spray applications, early postemergence broadcast in peanuts and dormant season applications, and "between cutting" applications in alfalfa: Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For harvest aid and desiccation application: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

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NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow others to enter the treated area until sprays have dried.

AVOID working in spray mist.

KEEP all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Store in original container and place in a locked storage area. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. Store at temperatures above 32°F. For Emergencies involving a Spill, Leak, Fire, Exposure, or Accident, Contact: CHEMTREC at (800) 424-9300.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not reuse container as container is not safe for food, feed or drinking water! Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INSTRUCTIONS AND INFORMATION

Do not apply this product through any type of irrigation system.

When PARAQUAT SL HERBICIDE™ is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Always refer to the additive label for rates of applications, directions for use, limitations, and restrictions.

Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

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The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

AERIAL DRIFT REDUCTION ADVISORY INFORMATION

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environment conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle that is designed for the intended application. With most nozzle types, narrower spray angles produce droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).



Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set-up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

GENERAL INFORMATION**APPLICATION**

PARAQUAT SL HERBICIDE™ is a contact herbicide is for control or suppression of a broad spectrum of emerged weeds including most annual small broadleaf and grass weeds. It can also be used to suppress perennial weeds by destroying green foliage and as a desiccant/defoliant at harvest.

Complete coverage of target weeds is necessary to get good control because PARAQUAT SL HERBICIDE™ is a contact-type herbicide. It is also necessary to obtain complete coverage for good crop desiccation and defoliations. Undesirable weed control and undesirable crop desiccation/defoliation will result if improper application technique and/or application to large, stressed, or mown weeds are made. Refer to the following details for specific application instructions.

PARAQUAT SL HERBICIDE™ is a liquid formulation containing 3 lbs. of active ingredient per gallon. It contains a nontoxic odor to help prevent accidental ingestions. It also contains an emetic (an agent which will induce vomiting if the product is swallowed).

Through coverage of all green foliage is required for efficacious weed control and crop defoliation and desiccation because PARAQUAT SL HERBICIDE™ requires actively growing green plant tissue to function. Drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines are unaffected by application with PARAQUAT SL HERBICIDE™.

There is no residual soil activity to affect later-planted crops or later germinating weeds because clay and organic matter rapidly tie up PARAQUAT SL HERBICIDE™.

ROTATIONAL CROPS

After the last application PARAQUAT SL HERBICIDE™, all rotational crops may be planted immediately.

RAINFESTNESS

Rain occurring 30 minutes or more after application will have no effect on the activity of PARAQUAT SL HERBICIDE™ because it is rapidly absorbed by the weed foliage.

USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

The following should always be added and be used at the recommended rates or there will be a reduction in efficacy of PARAQUAT SL HERBICIDE™.

Nonionic Surfactant: Either add a nonionic surfactant containing 50-74% surface-action agent at 0.25% v/v (2 pts./100 gals.), or add nonionic surfactant containing 75% or more surface-active agent at 0.125% v/v (1 pt./100 gals.), of the finished spray volume for groups applications. Add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume for aerial applications.

Crop Oil Concentrate: For ground applications, add a nonphytotoxic crop oil concentrate that contains 15-20% approved emulsifier, with 1.0% v/v (1 gal./100 gals.) of the finished spray volume. Add 1 pt. of crop oil concentrate per acre for aerial applications. For cotton harvest aid, do not use crop oil concentrate when using PARAQUAT SL HERBICIDE™.

NOZZLE SELECTION

The use of flat-fan nozzles is the most effective application of PARAQUAT SL HERBICIDE™. The use of flood nozzles may result in a reduction of weed control due to inadequate coverage because they produce large uneven droplets.

Use only flat fan nozzles when spraying less than 20 gallons of spray carrier per acre using the following table.

Table 1. Recommended Nozzle Type and Spray Pressures and Setup

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

Reduced control will result if nozzles, pressures, or setups differ from the above chart.

SPRAY CARRIER

PARAQUAT SL HERBICIDE™ may be inactivated by muddy water, or suspension-type fertilizers containing clay. Therefore, always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying PARAQUAT SL HERBICIDE™. Never use suspension-type fertilizers containing clay as the spray carrier. Always use the higher rate of PARAQUAT SL HERBICIDE™ and surfactant if using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier.

Note: It is important that when using liquid fertilizers such as 28% N as a spray carrier, that nonionic surfactant still be used with PARAQUAT SL HERBICIDE™. The use of liquid fertilizer carriers are not substitutes for surfactants.

RATES OF PARAQUAT SL HERBICIDE™

With each use, follow recommended rates listed in the following tables. When weeds are larger or are dense, use the higher label rates. For use as a harvest aid, use higher rate when crop vegetation is dense. Do not exceed 0.50 lbs. a.i./A in a minimum of 30 gallons of spray for broadcast applications with backpack sprayers.

SPRAY VOLUME

With each use, follow recommended minimum spray volumes listed in the following tables. Spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage because the volumes listed are minimum volumes only.

TARGET WEEDS SHOULD NOT EXCEED SIX INCHES IN HEIGHT WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE.

Application Timing

Applications should be made to small emerged weeds. Larger weeds more than 6 inches in height may be more difficult to control than weeds 1 – 6 inches in height. If possible, when green foliage is removed either from grazing or mowing, allow the weeds to grow 2-4 inches in height. Also, during harvesting forage or grain crops before spraying, weeds present in the field are also cut. Therefore, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height allowing sufficient green foliage to remain for applications.

BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

The best results occur for control of grass cover crops or volunteer cereals, when PARAQUAT SL HERBICIDE™ is applied prior to tillering or after boot stage, especially with a wheat cover crop or volunteer wheat. Complete control may not be achieved with treatments made between tillering and boot stage. Complete control of perennial cover crops should not be expected.

ENVIRONMENTAL CONDITIONS

This product is active over a wide range of environmental conditions such as cool (below 55°), cloudy or overcast weather. However these conditions will slow the activity of PARAQUAT SL HERBICIDE™.

SPOT SPRAYING

Refer to the following table if only small areas are to be sprayed with labeled applications.

Mixing Instructions for Small Quantities for Spot Spraying

If the Broadcast Rate Per Acre for PARAQUAT SL HERBICIDE™ is:	Add The Following Amount of PARAQUAT SL HERBICIDE™ to 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Add 1/3 - 1/2 fl. oz. of a nonionic surfactant for each gallon of spray at all times. Thoroughly wet the foliage, but not to the point of runoff when spot spraying in this manner.

TANK MIXING: ENHANCED BURNDOWN OF DIFFICULT-TO-CONTROL WEEDS AND FOR RESIDUAL WEED CONTROL**Photosynthetic Inhibitor Herbicides**

To control difficult weeds, tank mix PARAQUAT SL HERBICIDE™ with other herbicides. The addition of other photosynthetic inhibitors (PSI) herbicides will slow the activity of PARAQUAT SL HERBICIDE™. This allows PARAQUAT SL HERBICIDE™ to thoroughly distribute throughout a treated leaf, thus achieving better control than if PARAQUAT SL HERBICIDE™ is applied alone.

PARAQUAT SL HERBICIDE™ may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide	Lariat® Herbicide	Princep® Herbicide
Atrazine Herbicide	Lexone® Herbicide	Sencor® Herbicides
Bicep MAGNUM® Herbicide	Linex® Herbicide	
Bicep Lite II MAGNUM® Herbicide	Lorox® Herbicide	
Canopy® Herbicide	Lorox Plus™ Herbicide	

Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.

Improved Weed Control with PSIs

The addition of a PSI herbicide will help improve the control of difficult weeds listed below. Make a second application for best results.

Barnyardgrass	Kochia	Perennial weeds
Broadleaf signalgrass	Lambsquarters	(suppression only)
Cheatgrass	Malva (cheeseweed)	Prickly lettuce
Cocklebur	Marestail	Sedges
Fall panicum	Morningglory	Tansymustard
Giant ragweed	Pennsylvania smartweed	Velvetleaf
Knotweed		Volunteer wheat

Improved Control of Perennial and Annual Broadleaf Weeds

Tank mixing with labeled 2,4-D ester (Low Volatile), 2,4-DB or Banvel® herbicide will help improve control when perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc., or difficult to control annual broadleaf weeds such as giant ragweed or morning glory are present. Reduced grass control may be achieved when tank mixing the amine formulation of 2,4-D with PARAQUAT SL HERBICIDE™.

Order of Tank Mixing

It is advisable to tank mix PARAQUAT SL HERBICIDE™ and other listed products as follows:

1. Fill spray tank ½ full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add PARAQUAT SL HERBICIDE™ to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to other pesticide products labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

It is advisable to perform a jar test to check physical compatibility when using different formulation of the herbicides listed on this label.

GENERAL PRECAUTIONS AND RESTRICTIONS**EQUIPMENT**

PARAQUAT SL HERBICIDE™ is corrosive to aluminum. Thoroughly flush all aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift with water immediately after use.

The activity of PARAQUAT SL HERBICIDE™ may be reduced in dry areas where dust stirred up by high winds or equipment tires can coat weed or plant leaves. Therefore, avoid applications in extremely dusty conditions.

LIMITATIONS AND PRECAUTIONS

- Unless otherwise indicated, PARAQUAT SL HERBICIDE™ will severely injure or kill crop plants emerged at time of application if they come in contact with sprays.
- Do not pasture livestock in treated fields or feed treated foliage in cotton when this product is used as a cotton harvest aid.
- DO NOT use around home gardens, schools, recreational parks, or playgrounds.
- Do not apply to soils lacking clay minerals such as peat, muck, pure sand, artificial planting media for preplant and preemergence (to the crop) uses.
- To enable maximum weed and grass emergence prior to treatment, seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible.
- Avoid disturbing soil when seeding or transplanting.
- Transplanted plants may become damaged when they come in contact with plastic mulch used for preplant weed control and that has been treated with this product. To prevent damage to the crop, sufficient wash-off such as rainfall or sprinkler irrigation prior to planting may be needed.
- PARAQUAT SL HERBICIDE™ will be ineffective in controlling or suppressing weeds and grasses that have emerged after application.

APPLICATION INSTRUCTIONS

Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA (California only) New seedlings		Broadcast	0.7-1.3 pts. See Table 2	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> • Do not make more than one application per year. • Applications should be made during late winter or early spring. • Do not cut or harvest within 70 days after application. • Alfalfa foliage present at time of application will be burned. • Replanting may be needed due to the reduction of seedling stands. • Do not apply to seedling alfalfa grown for seed.
ALFALFA Preplant or Preemergence (No-till or conventional planting)		Broadcast or Banded Over-Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> • Do not make more than 2 applications per year. • Apply prior to emergence of the crop. Avoid disturbing soil when seeding. • Crop plants emerged at time of application will be killed.
ALFALFA Dormant season Established plantings Region A – See table at end of Alfalfa-section	Weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.	Broadcast	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> • Do not make more than one application per year. • Fall regrowth: Do not apply if last fall cutting is greater than 6". Spring regrowth: Do not apply if last cutting is greater than 2". • After the crop is dormant, apply to well-established stands that are at least 1-year old. • Yield of first cutting may be reduced because alfalfa foliage present at the time of application will be burned. • Do not cut or harvest within 42 days after application. • For improved and longer-lasting weed control, tank mix with metribuzin (Lexone or Sencor). Always refer to the metribuzin label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA Dormant season Tank Mix with Velpar® L- Herbicide Region A – See table at end of Alfalfa section	Weeds including chickweed, downy brome and tansymustard.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> Do not make more than 2 applications per year. When weeds are less than 4 inches tall apply at 0.7 pt. rate PARAQUAT SL HERBICIDE™ Mix PARAQUAT SL HERBICIDE™ with 1-2 qts. of Velpar L per acre. Use lower rate of Velpar L on loamy sands or sandy loams. Always refer to the Velpar L label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. During the dormant season, make one application to established alfalfa stands. Fall regrowth: Do not apply if last fall cutting is greater than 6", Spring regrowth: Do not apply if last cutting is greater than 2". Do not apply to alfalfa during the first season after seeding. Temporary chlorosis may occur on alfalfa regrowth. Increased chances of crop injury may occur due to stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought or frost. DO NOT USE on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result. Do not cut or harvest within 42 days of application.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA	Including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds California: Desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.					<ul style="list-style-type: none"> Do not make more than one application per year. Applications should be made before first spring cutting and during late fall or winter months after the last fall cutting. California: Do not apply if spring regrowth after grazing or cutting is more than 2 inches in Orange and Riverside counties, and all counties north of these counties. All other areas within Region B: Do not apply if regrowth after grazing or cutting is more than 2 inches. Do not harvest within 60 days of application. Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at time of application will be burned. If there is a severe weed infestation, total hay yield of first cutting may be reduced in alfalfa fields and the reduction is typically directly proportionate to the loss of weed weight. For improved and residual weed control in dormant established (at least 1-year-old) alfalfa, tank mix with metribuzin (Lexone or Sencor). Do not apply tank mix with metribuzin on alfalfa that is less than 1-year-old. Always refer to metribuzin label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. <p>California</p> <ul style="list-style-type: none"> If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.
Dormant Season		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
On established plantings: Region B – See table at end of Alfalfa section.		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
On fall-seeded newly established stands less than 1-year-old: Region A – See table at end of Alfalfa section		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	
On fall-seeded newly established stands less than 1-year-old: Region B – See table at end of Alfalfa section		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA (East of the Rocky Mountains) Between-cuttings treatment in established plantings. (Includes first year alfalfa)	Broadcast	0.7 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Control of weeds beyond the seedling stage and weed stubble cut off during harvest are less affected by this treatment. Make applications immediately after alfalfa has been removed for hay or silage. Do not treat more than 5 days after cutting. A reduction in first year alfalfa stands and yields may occur if alfalfa is allowed to regrow more than 2 inches. Burning of alfalfa foliage will occur at time of application. Weed control may be reduced where moisture is limited such as in arid climates. Do not cut or harvest within 30 days of application. Apply as needed up to three times during the growing season in addition to a dormant application. Do not make more than 2 applications during the first growing season of first-year alfalfa.
ALFALFA (For use only in the following states: ID, MT, NV, OR, UT, WA, WY) Desiccation of alfalfa to aid harvesting alfalfa seed	Broadcast	1.7-2.7 pts.	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not harvest until at least 4 days after application. Do not apply when weather conditions favor drift from treated areas. Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds. Use only on fields in production of alfalfa seed. Do not use on fields producing alfalfa for livestock feed. Do not use any portion of the treated field for human or animal feed, including seed, seed screenings, hay forage, or stubble. Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops. Do not use treated alfalfa seed for sprouting. Tag all alfalfa seed treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix at processing plants with, "NOT FOR HUMAN CONSUMPTION". The grower is responsible for notifying the processing plants of any seed crop treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix. Remove ALL PARAQUAT SL HERBICIDE™ /Reglone treated alfalfa seed screenings from the feed market because all screenings from alfalfa seed processing are prohibited from feed channels.
PARAQUAT SL HERBICIDE™ /Reglone Tank Mix	Broadcast	1.3-2.7 pts. PARAQUAT SL HERBICIDE™ / 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	

ALFALFA : New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only).

For Control of:	Rate/Acre*	
	For Suppression	For Control
Annual Bluegrass	—	10.7-21.3 fl. oz.
Chickweed	—	10.7-21.3 fl. oz.
Fiddleneck (6 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.
Red Maids (6 inches tall or less)	—	10.7-21.3 fl. oz.
Shepherdspurse	10.7-21.3 fl. oz.	—
Spikeweed (4 inches tall or less)	5.4 fl. oz.	10.7-16.0 fl. oz.
Volunteer Small Grain (8 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.

*Use the 5.4 fl. oz. rate only when alfalfa has at least 3 trifoliate leaves; use the 10.7 fl. oz. rate only when alfalfa has 6 trifoliate leaves; or use rates over 10.7 oz. only when there are 9 trifoliate leaves.

Alfalfa – Regions**REGION A**

Alaska
California: Counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumas, Sierra, Nevada.
Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming

REGION B

Alabama
Arizona
Arkansas
California: All other counties not listed in Region A.
Florida
Georgia
Hawaii
Louisiana
Mississippi
New Mexico
North Carolina
Oklahoma
South Carolina
Tennessee
Texas

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALMONDS	Directed Spray	0.8-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Avoid allowing spray to contact green stems (except suckers) or foliage. When spraying around young trees, use a shield or wrap plant. Do not graze treated areas and do not feed cover crops grown in treated areas to livestock. Do not apply when nuts to be harvested are on the ground. Retreatment or spot treatments may be necessary for mature woody weeds, perennial weeds, late germinating weeds and green suckers.
ARTICHOKE (GLOBE)	Directed Spray	1.7-2.7 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed 8 pts. per season. Applications must be made at least 7 days apart. Do not harvest within 24 hours of last application.
ASPARAGUS	Preplant or Preemergence Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Application should be made prior to emergence of the crop. Emerged asparagus at time of application will be killed.
ASPARAGUS Preemergence to established plantings at least 2 years old.	Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made prior to emergence of the crop or after last harvest. Emerged asparagus at time of application will be killed.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
BEANS, DRY NOT FOR USE IN CALIFORNIA Sweet lupin White sweet lupin White lupin Grain lupin Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Tepary beans Urd beans Guar PEAS, DRY NOT FOR USE IN CALIFORNIA Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas Catjang	Harvest-Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic spreader at 1 qt./100 gals. of spray mix. Use a single application of the higher rate for vining type of beans or bush type of lush growth. May also be applied as a split application and may improve vine coverage. However DO NOT make more than 2 applications per year or exceed a total of 1.3 pints per acre. Apply when at least 80% of the pods are yellowing and mostly ripe and when leaves are no more than 40% green of bush type peas or beans or 30% of vine type peas or beans are green. DO NOT apply when weather conditions favor spray drift. To reduce drift, a drift control agent may be included. Not registered for use on dry beans and dry peas in California.
BERRIES Blackberry Blueberry Boysenberry Currant Elderberry Gooseberry Huckleberry Loganberry Rasberry	Postemergence Directed Spray	1.3-2.7 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. New canes or shoots can be injured. Therefore, apply before their emergence. To prevent crop injury from spray mist, apply as a coarse spray.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CACAO	Directed Spray	1.3-2.7 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Apply when weeds are succulent and growth is from 1-6". Retreatment or spot treatments may be necessary for mature woody weeds, late-germinating weeds and grasses and for perennials. Use a shield for young trees to prevent spray from contacting cacao plants, as injury may result. Do not spray under windy conditions. Do not graze treated areas or feed treated cover crops to livestock.
CASSAVAS, TANIER & YAMS (Puerto Rico only)	Shielded Post Directed Spray	1.3 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> Cassavas and Taniers: Do not make more than 3 applications per year. Yams: Do not make more than 2 applications per year. Make applications when weeds are succulent and growth is 1-6". Prevent spray from contacting crop to prevent injury to crop. Do not spray under windy conditions. Do not graze treated areas or feed treated forage to livestock.

General Information for Chemical Fallow

- As the density of stubble, crop residue or weeds increases, use higher spray volumes for better coverage.
- To control volunteer wheat or downy brome, fall-applied treatments generally work best with PARAQUAT SL HERBICIDE™. If possible, tank mix with Atrazine for maximum burndown and residual control.
- Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.
- Before applying PARAQUAT SL HERBICIDE™, cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest.
- The addition of dicamba (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds. Always refer to the product label(s) for 2,4-D ester (Low Volatile), dicamba (Banvel), or residual herbicide for rates of applications, directions for use, limitations, and restrictions.
- It is permissible to tank mix with registered residual herbicide combinations other than those listed for extended weed control during the fallow period.
- Weeds and grasses emerging after application and weeds taller than 6 inches will not be controlled.
- Crop plants emerged at the time of application will be killed.
- The minimum total spray per acre allowed is 5 gallons for ground and 5 gallons for air applications.
- Apply 5-60 gallons spray mix per acre by ground application. When applying at <10 GPA by ground:
 - Do not apply with floaters or exceed a speed of 10 mph.
 - Apply with flat fan nozzles at 30-40 psi.
 - Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./acre.
 - By air: apply in 5-10 gals. of spray mix per acre.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Continuous Wheat 2-3 Month Recropping Interval	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply at least 45 days before seeding. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow".
CHEMICAL FALLOW Wheat-Fallow- Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Spray before weeds produce seeds. Control of volunteer wheat and downy brome increases when applications are made late August or early September. For improved burndown and residual control of weeds, tank mix with Atrazine, Marksman® Herbicide, or Command® Herbicide. For burndown and residual control of grass and broadleaf weed tank mix with metribuzin (Sencor 75DF). Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions. Refer to the section "General Information for Chemical Fallow".
CHEMICAL FALLOW Wheat-Fallow- Wheat Rotations (Spring applied; seeded 3-5 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To conserve moisture, application should be made March 1 to April 15, prior to spring rains. Even though moisture loss is greater when applications are made after the boot stage, volunteer wheat is easier to control after this stage. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow". For burndown and residual control of grass and broadleaf weeds, tank mix with metribuzin, (Sencor 75DF/Lexone). Always refer to the label for metribuzin (Sencor 75DF/Lexone) for rates of applications, directions for use, limitations, and restrictions.
CHEMICAL FALLOW Wheat-Annual Crop¹-Wheat Rotations (Fall applied in wheat stubble)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For improved burndown and residual weed control, tank mix with Atrazine or Marksman. Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions. Make applications after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before seed production. Applications made late August to November help control volunteer wheat and downy brome. Refer to the section "General Information for Chemical Fallow".

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop¹)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For enhanced burndown and residual weed control, tank mix with Atrazine. Always refer to the respective product label(s) for Atrazine for rates of applications, directions for use, limitations, and restrictions. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow". Refer to the Atrazine label for recommendations pertaining to soil pH and recropping intervals.

¹Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
<p>CLOVER AND OTHER LEGUMES Including velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.</p> <p>Dormant Season</p> <p>On established plantings: Region A – See table at end of Alfalfa section.</p> <p>On established plantings: Region B – See table at end of Alfalfa section.</p> <p>On fall-seeded, newly established stands less than 1-year-old: Region A – See table at end of Alfalfa section.</p> <p>On fall-seeded, newly established stands less than 1-year-old: Region B – See table at end of Alfalfa section.</p>	<p>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogiennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.</p> <p>California</p> <ul style="list-style-type: none"> Use for desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel. 	Broadcast	1.3-2.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> Do not make more than 1 application per year. Applications should be made during late fall or winter months after the last fall cutting and before first spring cutting. Do not apply if regrowth after grazing or cutting is more than 2". Do not harvest within 60 days of application. CAUTION: Stand and/or yield reductions may occur when applications are made to clover or other legumes that are not dormant, or have broken dormancy. Therefore, it may be necessary to replant. Burning will occur to green clover or other legumes' foliage present at the time of application. Discoloration and temporary stunting will occur in clover or other legumes foliage present at the time of application. If there is severe weed infestation, the total hay yield of first cutting may be reduced in clover or other legumes fields and is usually directly proportionate to the loss of weed weight. <p>IN CALIFORNIA:</p> <ul style="list-style-type: none"> If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.
		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CORN FIELD CORN POPCORN SWEET CORN SEED CORN (Used alone)	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Includes field, fresh sweet, forage, fodder and popcorn. To permit maximum weed and grass emergence, seedbeds should be formed as far ahead of planting and treatment as possible. Seeding should be done with a minimum amount of soil disturbance. Control will not occur when applications are made after weeds and grasses have emerged. However, crop plants emerged at time of application will be killed.
CORN Tank Mixes for No-till/Reduced Till	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.*	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made as broadcast sprays before, during or after planting, but before crop emergence. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control: <ul style="list-style-type: none"> 2,4-D Ester (Low Volatile) Harass® AAtrex/Atrazine® Harass® Xtra Banvel® Lasso® Herbicide Bicep Linex® MAGNUM® Lorox® Bicep Lite II Princep® MAGNUM® Prowl® Herbicide Dual MAGNUM® Simazine® Frontier® Surpass® EC Guardsman® Surpass® 100 Harmony® Extra Herbicide Topnotch® (Preplant only) PARAQUAT SL HERBICIDE™ may also be tank mixed with Ambush® insecticide. Always refer to respective product label(s) for rates of applications, directions for use, limitations, and restrictions. *Always refer to respective product label(s) to confirm if these products can be applied by air.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SWEET CORN, SEED CORN	Postemergence Directed Spray (including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made when weeds are actively growing. Use a higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts corn plants. <p>For Hooded Or Shielded Sprayers:</p> <ul style="list-style-type: none"> Use a hooded or shielded sprayer with skids or wheel on the spray boom to maintain spray height in order to prevent excessive crop phytotoxicity. Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. <p>For Directed Spray Without Hooded Or Shielded Sprayers.</p> <p><i>Corn height is measured from soil surface to top of whorl.</i></p> <ul style="list-style-type: none"> Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks. Corn plants shorter than 10" may be injured and not recover. For corn more than 20" tall: Arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks. Injury to corn foliage will occur if sprayed. However, corn will recover and develop normally.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SEED CORN	Harvest Aid Broadcast	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than one application per year. Make ONE (1) application at least 7 days prior to harvest. Apply after the corn is mature. This is indicated by a black layer which forms at the base of the kernels. You may consult your local agricultural authority for help in identifying the black layer. Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v. To desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18" use 1.3 pts. Drought stressed plants, especially broadleaf weeds, can be difficult to kill and desiccation may not be complete.
FIELD CORN ONLY (grain, fodder, forage)	Postemergence Directed Spray USDA Witchweed Eradication Program	1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. If regrowth occurs, initiate sprays in late June to early July and repeat in early August. Follow application instructions in post-emergence directed spray section above.
FIELD CORN ONLY (grain, fodder, forage) 2,4-D Amine AE Tank Mix	Postemergence Directed Spray USDA Witchweed Eradication Program	5.4 fl. oz. +0.5 lb. 2,4-D Amine AE	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as directed spray onto grassy weeds and witchweed before witchweed blooms. If regrowth occurs, reapply. Follow application instructions in post-emergence directed spray section above. Always refer to respective product label(s) for rates of applications, directions for use, limitations, and restrictions.
COTTON (Used alone)	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply prior to, during or after planting, but before crop emergence. For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment. Seeding should be done with a minimum of soil disturbance.
COTTON (California only; Used alone)	Preplant	5.4-10.7 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Goal® Herbicide Tank Mix	Preplant or Fallow Bed Broadcast	1.7-2.7 pts.	Ground: Or Air: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Always refer to the Goal® label for weeds controlled rates of applications, directions for use, limitations, and restrictions.
COTTON Other Tank Mixes	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. For improved residual control or burndown, PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: <ul style="list-style-type: none"> Caparol® Herbicide Cotoran® Herbicide Cotton-Pro® Herbicide Diurone® Dual MAGNUM® Harmony® Extra (Preplant Only) Meturon® Herbicide MSMA Prowl® Zonal® Herbicide When tank mixing with Cotoran DF® or Meturon DF®, follow mixing instructions carefully, maintain constant agitation and see Order of Tank Mixing section on respective labels. When tank mixing with any of the herbicides listed above, always refer to the respective product label(s) for weeds controlled rates of applications, directions for use, limitations, and restrictions.

COTTON Harvest Aid Use Restrictions

- Do not make more than 4 applications per year.
- Do not pasture livestock in treated fields or feed treated foliage.
- Do not apply to cotton within 3 days before harvest.
- Repeat application if necessary. Do not exceed a total of 1.3 pts./A as a harvest aid.
- May be tank mixed with other cotton harvest aid materials known to be effective by a local expert. Unless otherwise instructed in this label, always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.
- PARAQUAT SL HERBICIDE™ can be applied in a tank mix with methyl parathion and/or Karate® insecticide. Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.
- Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOUTHERN COTTON Harvest aid for bolls opening and defoliation (Tank mix with phosphate and chlorate defoliant)	Broadcast	5.4 fl. oz. + 1 pt. Phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Development of immature bolls will be inhibited. Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
SOUTHERN COTTON Additional tank mixes for boll opening and defoliation	Broadcast	2.1-3.3 oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 4 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with the following products to aid in defoliation and opening of mature bolls. Accelerate® Defoliant Def® Defoliant Dropp® Defoliant Ethephon® Plant Growth Regulator Folex® Defoliant Harvade® Harvest Growth Regulator Prep™ PGR Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. Always refer to the tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
SOUTHERN COTTON Post Defoliation – To aid in opening of mature bolls and to desiccate green weeds.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. If weed infestation is heavy or dense use higher rate. Apply when 75% or more of bolls are open and remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. After a defoliation or conditioning application has been made, delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking.
WESTERN COTTON Harvest aid for boll opening and early defoliation	Broadcast	3.7-5.4 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. On rank cotton, use higher rate. Do not use more than 5.4 fl. oz of PARAQUAT SL HERBICIDE™ for early defoliation as excessive desiccation may occur. Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB). Development of immature bolls will be inhibited. Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
WESTERN COTTON Harvest aid for boll opening and mid-to-late defoliation	Broadcast	5.4-10.7 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliation and/or other compatible harvest aid products.		3 (Alone)	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use the 10.7 fl. oz. rate of PARAQUAT SL HERBICIDE™ in desert cotton areas or on rank vigorous cotton. Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB). Development of immature bolls will be inhibited. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
COTTON Stripper or Spindle Harvested Harvest aid for defoliation and boll opening.	Broadcast	2.1-7.5 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature. DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED, SLICE BOLLS AND INSPECT THE SEED FOR MATURITY. PARAQUAT SL HERBICIDE™ may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant® Def Defoliant® Dropp Defoliant® Ethephone Plant Growth Regulator® Folex Defoliant® Harvade Harvest Growth Regulator® Prep™ PGR May be applied as a split application. Do not exceed a total of 1.3 pts./A. To avoid leaf sticking, apply PARAQUAT SL HERBICIDE™ as a desiccant approximately 3-7 days after defoliant or a conditioning application and 7-14 days before harvest. Cooler temperatures may cause a longer waiting period between application of PARAQUAT SL HERBICIDE™ as a desiccant and defoliation/conditioner. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Late season desiccation	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. May be applied as a split application. Do not exceed a total of 1.3 pts./A. Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB). Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking if a defoliation or conditioning application has been made. May be tank mixed with other harvest aid materials known to the local expert to be effective.
COTTON Desiccation of Regrowth	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use to desiccate regrowth occurring after defoliation or desiccation. Because regrowth is difficult to control thorough coverage with the full recommended rate is necessary. Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete. If regrowth is excessive, use higher rate.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
EASTER LILIES (Field grown)	Preemergence	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not exceed two applications per year.
FALLOW LAND Prior to planting of any crops	Preplant Broadcast to Fallow Land	1.0-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year, during the fallow period. Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes. Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges. For weeds approaching the maximum size of 6" the higher rate may be used. No more than 2 applications should be made during the fallow period. Prior to application allow maximum weed emergence to maximize the benefit of this use. Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.
GRASSES (For Seed) (For Use in Seedbed Preparation)	Preplant, At Planting, or Preemergence	1.3-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Prepare the seedbeds and allow weeds to germinate. Apply PARAQUAT SL HERBICIDE™ when weeds are at the 3-5 leaf stage. Applications may be repeated as necessary (but only up to 3 applications per year) prior to grass emergence. Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.
GUAR (Preharvest desiccation)	Preharvest	1.3 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply after the pods are fully mature. Do not graze treated areas or use the treated forage for animal feed.
GUAVA	Directed Spray	2.5 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Do not allow spray to contact green stems, fruit or foliage. Do not graze treated areas. Do not feed cover crops grown in treated areas to livestock. Retreatment or spot spraying may be necessary for mature woody weeds, late-germinating weeds and grasses, and perennials.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
HOPS (ID, OR, & WA only)	Directed Spray and/or Suckering and Stripping.	1.3 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Retreatment of spot treatment may be necessary. Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result. Do not allow animals to graze in treated hopyards. Silage and hop vine refuse may be fed to livestock. Spray only the basal 2 ft. of the vines for sucking and stripping. Repeat as necessary, but only up to 3 applications per season. Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using PARAQUAT SL HERBICIDE™ on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs. Chemical Pruning: Spray when vines are less than 3 ft. tall to burn back existing vines and obtain even emergence or subsequent vines APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.
LENTILS NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.	Harvest Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume. May also be applied as a split application. DO NOT make more than 2 applications or exceed a total of 1.3 pts./A. The split application may improve coverage. Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color. DO NOT apply when weather conditions favor spray drift. To reduce spray drift a drift control agent may be included.
MINT (Peppermint, Spearmint)	Dormant Season	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For suppression of weeds such as, groundsel, chickweed, downy brome, bluegrass, Italian ryegrass, prickly lettuce. Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall. Do not apply more than 2.0 pts./A. per dormant season. May be tank mixed with Sinbar® Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Always refer to the Sinbar® (terbacil) label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ONIONS (seeded) AND GARLIC	Preplant/ Preemergence	1.7-2.7 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> Do not make more than 1 application per year. For heavy weed infestations or wild oat control use the higher rate. Apply only one application per season at the 2.7 pts./A dosage. Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence. Apply a maximum of 2.7 pts./A per season.
PASSION FRUIT	Directed Spray	2.5 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. If bark is still green at application time, use a shield or wrap vine. Pick all fruit off the ground prior to application if application is to be made during harvest season. Do not allow animals to graze on treated areas. It may be necessary to retreat or spot treat.
PEANUTS	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack. For at ground crack use, PARAQUAT SL HERBICIDE™ can be tank mixed with Pursuit® Herbicide or Dual MAGNUM® for residual weed control. Always refer to the Pursuit® or Dual MAGNUM® label for a list of weeds controlled, application rates, necessary precautions, and use limitations. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Do not apply by air.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PEANUTS Basagran® Herbicide Tank Mix	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Tank mix PARAQUAT SL HERBICIDE™ with Basagran® at 1 pt/A. for improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida. This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Always refer to the Basagran® label for weeds controlled rates of applications, directions for use, limitations, and restrictions. If peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment do not apply this tank mix as injury may be enhanced and/or prolonged. During prolonged periods of drought or unseasonably cold weather do not apply this tank mix as unsatisfactory weed control may result. Do not apply by air.
PEANUTS Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	Broadcast Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix PARAQUAT SL HERBICIDE™ with 8-16 oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200. Do not apply a total of more than 10.8 fl. oz. of product per season and make no more than 2 applications per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Always refer to the Butyrac® or Butoxone 200® labels for weeds controlled rates of applications, directions for use, limitations, and restrictions. Do not apply by air.
PIGEON PEAS (Puerto Rico only)	Directed Spray	1.3 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> Do not make more than 1 application per year. Avoid contact with pigeon pea foliage. Do not make more than 1 application per season. Do not graze treated areas or feed treated forage to livestock. Cannery waste can be fed to livestock.
PINEAPPLE	Directed Spray	1.3-2.7 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> Do not exceed 3 applications per season. More mature weeds may require retreatment.
POTATO	Preplant or Preemergence Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply up to ground cracking stage, before potatoes have emerged.
POTATO (California, Washington, Oregon, Idaho only; used alone)	Preplant Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
POTATO Fresh Market Only Preharvest vine killing and weed desiccation. For Use Only in the states of: Colorado, Delaware, Idaho, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Utah, Washington, Wisconsin and Wyoming	Broadcast	0.7-1.3 pts.	Ground: 20 gals.	3	For Fresh Market Potatoes Only. (Fresh Market Potatoes include potatoes that are sent directly from the field to a consumer, grocery store, or processor for use.) <ul style="list-style-type: none"> Do not make more than 2 applications per year. DO NOT use on potatoes that will be stored as tuber decomposition may result. Potatoes must be harvested promptly after desiccation and processed or consumed immediately. DO NOT apply to drought stressed potato vines. DO NOT use to desiccate the vines of seed potatoes as seed pieces may fail to germinate and grow normally. DO NOT pasture livestock in treated potato fields. DO NOT exceed 2.6 pts./A per season. Begin application when leaves begin to turn yellow. Immature potato foliage is tolerant to PARAQUAT SL HERBICIDE™. However, desiccation will not be complete under this condition. Use 1.3 pts./A rate where quick vine kill is desired. For dense vine growth, use 2 applications of 0.6 pt/A. Split applications must be applied a minimum of five days apart.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
RICE	Preplant or Preemergence Broadcast	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. When vegetation is dense, use higher rates and spray volumes. Seeding should be done with a minimum amount of soil disturbance. PARAQUAT SL HERBICIDE™ will not control weeds and grasses emerging after application. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved or extended weed control. Always refer to the tank mix herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.
SAFFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during and after planting but before crop emergence.
SAFFLOWER (California only)	Preplant Broadcast	0.7 pt.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.
SMALL GRAINS (Barley, wheat)	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year.
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. A tank mix with Hoelon® 3EC will improve grass control. Apply when weeds are actively growing and 1-6" in height. Weeds 6 inches or taller may not be controlled. Do not apply this tank mix to barley as crop injury may result. Always refer to the Hoelon® 3EC label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain)	Preplant/ Preemergence Broadcast or Band	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum weed and grass emergence seedbeds should be formed as far ahead of planting as possible Seeding should be done with a minimum amount of soil disturbance.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SORGHUM (Grain) Atrazine & 2,4-D ester (Low Volatile) Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.		48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may assist in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Always refer to the specific tank mix herbicide label(s) for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain) Harmony® Extra Herbicide Tank Mix	Preplant	1.3-2.5 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For Improved weed control, PARAQUAT SL HERBICIDE™ may be tank mixed with Harmony Extra. Always refer to the Harmony Extra label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain)	Postemergence Directed (Including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when weeds are actively growing. Use higher rate on larger on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts sorghum plants. Do not exceed 2 postemergence-directed applications or exceed a total of 5.3 pts. PARAQUAT SL HERBICIDE™ per season. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height. Apply by directing spray between the rows and by using hooded or shielded sprayers to prevent spray contact with crop plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply when sorghum is at least 12" tall when naturally standing. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray. Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions																
SOYBEANS	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none">Do not make more than 3 applications per year.Do not exceed a total of 4.0 pts. Of PARAQUAT SL HERBICIDE™ per season.Apply as a broadcast spray before, during or after planting, but before crop emergence.PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control:<table><tr><td>2,4-DB</td><td>Lorox</td></tr><tr><td>Canopy</td><td>Lorox Plus</td></tr><tr><td>Dual MAGNUM</td><td>Prowl</td></tr><tr><td>Goal</td><td>Pursuit Herbicide</td></tr><tr><td>Harmony Extra (Preplant Only)</td><td>Scepter Herbicide</td></tr><tr><td>Lasso</td><td>Sencor Herbicide</td></tr><tr><td>Lexone</td><td>Surflan® Herbicide</td></tr><tr><td>Linex</td><td>Turbo Herbicide</td></tr></table>The rate of PARAQUAT SL HERBICIDE™ to be used in these tank mixtures is dependent on weed height and growing conditions. Where weed canopy is dense or under dry conditions use the highest recommended rate of PARAQUAT SL HERBICIDE™. Always refer to the respective product label(s) for a list of weeds controlled, rates of applications, directions for use, limitations, and restrictions.The lower application rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting.Seeding should be done with a minimum amount of soil disturbance.Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).	2,4-DB	Lorox	Canopy	Lorox Plus	Dual MAGNUM	Prowl	Goal	Pursuit Herbicide	Harmony Extra (Preplant Only)	Scepter Herbicide	Lasso	Sencor Herbicide	Lexone	Surflan® Herbicide	Linex	Turbo Herbicide
2,4-DB	Lorox																				
Canopy	Lorox Plus																				
Dual MAGNUM	Prowl																				
Goal	Pursuit Herbicide																				
Harmony Extra (Preplant Only)	Scepter Herbicide																				
Lasso	Sencor Herbicide																				
Lexone	Surflan® Herbicide																				
Linex	Turbo Herbicide																				
SOYBEANS 2,4-D ester (Low Volatile) Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none">Do not make more than 3 applications per year.Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting.Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting.Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not able to accept the results of soybean injury including possible loss of stand and yield.Do not use amine formulation as PARAQUAT SL HERBICIDE™ activity may be reduced.May be tank mixed with residual herbicides listed above.Always refer to the 2,4-D ester (Low Volatile) label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.																

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Postemergence Directed Spray (Includes Hooded or Shielded)	3.0-5.3 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply when weeds are actively growing. Use the lower rate of PARAQUAT SL HERBICIDE™ for control of seeding johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2' tall. For control of 2-4" red rice, <i>Brachiaria</i>, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 5.3 fl. oz. of PARAQUAT SL HERBICIDE™. Use 5.3 fl. oz. of PARAQUAT SL HERBICIDE™ for control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed. Apply PARAQUAT SL HERBICIDE™ at 5.3 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-D formulation for control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice. Always refer to the 2,4-D label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not graze or harvest for forage or hay. If necessary, make a second and final application 7-14 days later. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. Use higher rate on larger (less than 6") on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray intentionally or accidentally including drift of fine droplets) contacts the plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Do not treat on soybeans that are less than 8" tall. Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Some crop injury will occur. The degree of injury is dependent upon the precision of application and spraying conditions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Harvest Aid	5.4-10.7 fl. oz.	Ground: 20 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Indeterminant varieties: Applications should be made when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, ½ of leaves have dropped, and remaining leaves are yellowing. Injury will occur on immature soybeans. Mature cocklebur, especially drought-stressed plants, are tolerant to PARAQUAT SL HERBICIDE™ and desiccation will not be complete. Always use the higher rate when treating cocklebur. Do not apply within 15 days of harvest. Do not graze or harvest for forage or hay.
STRAWBERRIES	Postemergence Directed Spray	1.3 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Direct spray between the rows, using shields to prevent spray contact with crop plants. Do not allow spray to contact strawberry plants as injury or excessive residues may result. Do not apply more than 3 times per season. Do not graze livestock in treated areas.
SUGAR BEETS	Preplant or Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For heavier weed infestations use the higher label rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. Can be used in fallow bed/stale seedbed for weed control. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SUGARCANE	Postemergence Directed Spray (includes Hooded or Shielded)			—	General Comments <ul style="list-style-type: none"> Do not make more than 2 applications per year, except applications made by air in Florida and Texas in which the maximum number of applications allowed is 1 per year. Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction. If necessary, a second and final application can be made when new weed growth is 2-6" high. Do not graze treated areas or feed treated forage to livestock.
—Florida—		1.3 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Optimum results can be obtained by applying in early spring (March-April) when weeds are small. Do not apply after June 1, as cane growth may be stunted and yields reduced.
—Hawaii—		1.3 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not apply after cane rows have closed in.
—Louisiana—		0.7-2.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For tiller control, apply when tillers are less than 18" high. For heavier weed infestations or tiller growth use the higher rate.
—Florida & Texas—	Harvest Aid	0.4-0.7 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 1 application per year. Under cool, cloudy weather conditions use higher rate. Apply 3-14 days before burning and harvest.
SUNFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during, or after planting but before crop emergence.
SUNFLOWER	Preharvest Desiccation Broadcast	0.8-1.3 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this is equivalent to the time when the back of the heads are yellow and the bracts are turning brown. Do not graze treated areas or feed treated forage to livestock. When crop stands or weed infestations are heavy, use the higher label rate.
TARO, DRYLAND (Hawaii Only)	Postemergence Directed Spray	1.3-2.1 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not allow spray to contact the taro plants as injury may result. Make the first application when weed growth is 1-4" high. Weeds emerging after the application will not be controlled. A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.
TREE PLANTATION ESTABLISH-MENT Deciduous and Conifers	Preplant Broadcast	1.3-2.7 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum emergence of weeds prepare ground early. Apply prior to planting. Plant with minimal soil disturbance. For heavier weed infestations, use the higher application rate. For improved burndown or residual control, tank mix PARAQUAT SL HERBICIDE™ with other herbicides labeled for this use. Always refer to the specific tank mix herbicide label(s) for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not apply in less than 20 gals./A as weed control will be reduced.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Orchards, Vineyards, Windbreak, Shade & Ornamental Trees: Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pistachios Plums Prunes Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arbovitae, ash, elm, fir, oak, pine, etc.	Directed Spray	1.7 - 2.7 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. Do not allow spray to make contact with green stems (except suckers), fruit or foliage. Use the shield or wrap plant when spraying around young trees or vines. Do not graze treated areas. Do not feed covered crops grown in treated areas to livestock. Do not apply when figs, nuts or olives to be harvested are on the ground. For apricots – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For cherries – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For figs – Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season. For grapes – treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage. For kiwi fruit – Do not treat more than 3 times per year. For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary. For nectarines – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For olives – Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season. For peaches – Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season. For pistachios – Do not exceed 2 applications after shells split. For plums – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.

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TREES AND VINES Tank Mixes	Directed Spray	1.7-2.7 pts.	Ground: 10 gals.	Always refer to other Tank Mix labels	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. PARAQUAT SL HERBICIDE™ may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: Devrinol® Herbicide Goal® Karmex® Krovar® Herbicides Princep® Sinbar® Solicam® Herbicide Surflan® Always refer to other herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
TYFON (New Hampshire only)	Preplant Preemergence	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seeding should be done with a minimum of soil disturbance. Weeds and grasses emerging after treatment will not be controlled. Crop plants emerged at time of application will be injured.
VEGETABLES (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Gherkin Gourd, Edible Groundcherry Lettuce Momordica spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	Preplant Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence. Banded or broadcast treatment applications can be made before, during or after planting but prior to the crop emergence. For heavier weed infestations, use the higher rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal®. Always refer to the Goal® label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not harvest tomatoes within 30 days after application.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
VEGETABLES Eggplant Tomatoes Peppers	Directed Spray	1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control or suppression of emerged weeds between rows after crop establishment. Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure. Do not spray under conditions which may cause excessive drift. Apply when weeds are succulent and weed growth is less than 6". Do not apply more than 3 applications per season. Do not allow animals to graze in treated areas. Do not harvest tomatoes within 30 days after application.
VEGETABLES Tomatoes	After Final Harvest	1.6-2.5 pts.	Ground: 40-120 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply in 40-120 gallons of water per acre (0.62-0.93 lb. a.i./A). Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. spray solution). To ensure maximum herbicide burndown tomato vines should be thoroughly covered. PARAQUAT SL HERBICIDE™ may be deactivated and less efficacious when dirty or muddy water is used. To aid in the removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently. DO NOT apply more than a total of 3 lbs. active ingredient (paraquat) per acre per season. To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For control of volunteer barley in preformed seedbeds. Do not harvest tomatoes within 30 days after application.
VEGETABLES Rhubarb	Dormant	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not exceed 2 applications per year. Apply during dormant season before buds in crown begin to grow.

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RESIN SOAKING

Pines including Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines.

Tree Selection – Trees should be selected from stands on sites not subject to stress from periods of extreme drought because the desiccating effect of PARAQUAT SL HERBICIDE™ is accentuated during drought, causing a reduction in the amount of oleoresin deposited in the xylem. Vigorous, non-stagnated natural or planted stands should be selected. Plan PARAQUAT SL HERBICIDE™ treatments in stagnated or commercial timber stands; not sooner than three years after a commercial thinning.

Application Directions – To bring the treatment into contact with sapwood (or xylem), apply water-diluted PARAQUAT SL HERBICIDE™ to an appropriate wound in the tree trunk.

Bark Streaks or Cuts: Use a standard or rotary bark hack or a chainsaw shipping tool (used in naval stores work) to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. Do not exceed 1/3 of the circumference of the tree. Serious girdling of the trunk and premature death of the tree can result if multiple streaks or cuts are made. Apply a coarse spray (about 1.7-5.0 ml) PARAQUAT SL HERBICIDE™ solution (1-5% cation, wt./wt. basis) to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak. For example, for a 9-inch diameter tree, using 3 ml of 2 or 4% PARAQUAT SL HERBICIDE™ solution will cover the 1-inch wide streak and will result in application of 60 or 120 mg per streak.

Time of Treatment: Less severe pine beetle infestations and longer tree life usually result during cool season treatments under non-drought seasons. However, resin soaking can occur from treatments made any time of the year.

Interval between Treatment and Tree Harvest: There should be at least a 6-month interval between application of PARAQUAT SL HERBICIDE™ and tree harvest. However it is preferable the interval is from 12-24 months, even though intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks possibly making early harvest necessary. With this treatment, there is a potential for promoting beetle attack or causing premature death of the tree. At high dosage rates, desiccation of the xylem tissue, rather than the desired resin soaking, may occur.

Note: This type of treatment may reduce stem growth during the period between treatment and tree harvest.

Dilution Table for PARAQUAT SL HERBICIDE™ (3.0 lbs. cation per gallon)	
Concentration of Cation Desired (Wt./Wt. Basis)	Add the Following No. Gal. of Water to $\frac{2}{3}$ Gallon of PARAQUAT SL HERBICIDE™
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs)	Broadcast	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved emerged weed control or extended weed control. Always refer to the tank mix herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
NONCROP USES	Broadcast or Spot Treatment	1.7- 2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Repeat applications as necessary but do not make more than 10 applications per year. To be used in noncrop areas including public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, and fence lines. Avoid spray contact with the foliage of ornamentals or desired plants.

PARAQUAT SL HERBICIDE™

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendati on	<ul style="list-style-type: none"> Do not make more than 3 applications per year. West of Cascade and Sierra Nevada Mountains <ul style="list-style-type: none"> Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth. Apply on moderately to heavily grazed areas for best seeding results. Do not use in heavy sod and weed growth areas. East of Rocky Mountains <ul style="list-style-type: none"> Use the 1.3 pts rate on vigorous or coarse sod species such as brome grass. Apply prior to, or at time of seeding grasses or forage legumes. Apply only to grazed or mowed pastures not more than 3" in height at time of treatment. Bermudagrass or Bahiagrass Sods <ul style="list-style-type: none"> Apply in late summer or early fall to sod not exceeding 3" in height. For control of emerged Little Barley, apply in February or March before the mid-boot stage of Little Barley. Bermudagrass and Coastal Bermudagrass Pastures <ul style="list-style-type: none"> Apply when bermudagrass is dormant. For control of little barley, apply before the mid-boot stage. Do not mow for hay until 40 days after treatment.
For Control of Endophyte- Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	Broadcast (Split Application)	0.7-1.3 pts. followed by 0.7-1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Use split applications of 10-21 days apart if necessary. Do not exceed 2.6 pts./A total in preparation for reseeding. For spring plantings, the initial application of 0.7-1.3 pts. may be made the previous fall. Apply when fescue is actively growing and no more than 4" high. To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.

PARAQUAT SL HERBICIDE™

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11/22/05

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
<p>*For Prickly Pear Desiccation in Pastures</p> <p>**Not for use in California</p>	Spot Sprays	0.8 fl. oz. per gallon of water	Spray to wet weed foliage	—	<ul style="list-style-type: none"> Do not make more than 10 applications per year. Hand-held equipment such as knapsacks, backpack sprayers, pump-up pressure sprayers, hand-guns, and handwands, can be used to direct the spray onto weed foliage so that the spray thoroughly wets foliage. Mix 0.8 fl. oz. of PARAQUAT SL HERBICIDE™ and 1/3 fl. oz. of a nonionic surfactant per gallon of water. Completely and uniformly cover all green prickly pear foliage with spray. Apply in May through September for best desiccation results. Do not use more than 1.6 pts. of PARAQUAT SL HERBICIDE™ per acre per year. Apply only to pastures with no more than 3" of height at time of treatment. Tank mix with Grazon® P+D Specialty® herbicide at a rate of 1-2 fl. oz. per gallon of water for improved desiccation and perennial control of Prickly pear. Always refer to the Grazon® P+D Specialty herbicide label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

PARAQUAT SL HERBICIDE™

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11/22/05

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
*For Juniper Species leaf moisture reduction or desiccation prior to <u>Prescribed</u> burning of pastures *Not for use in California	Broadcast	1.3 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 10 applications per year. Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists. Apply during hot, dry weather conditions (generally July and August). Use 2% v/v nonionic surfactant in a minimum of 5 gal. spray solution. Monitor Juniper leaf moisture content. Maximum leaf moisture reduction generally occurs 3-4 weeks after PARAQUAT SL HERBICIDE™ application. Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns. Reduction in leaf moisture can be adversely affected by cool or humid weather conditions. Do not graze livestock after application or prior to burning.
*Native Pastures ** Not for use in California	Broadcast	1.0-1.25 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply PARAQUAT SL HERBICIDE™ for control of Downy and Japanese Brome. Apply in spring after 90% node formation of brome species, but before full bloom. Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season. Do not apply more than 1.25 pts. PARAQUAT SL HERBICIDE™ per year. Apply only to pastures with no more than 3' of height at time of treatment.

Conversion Table PARAQUAT SL HERBICIDE™ to Be Applied			
Ounces	Pints	Lb. a.i.	Acres/Gallon
2.5	0.16	0.06	51.3
4.8	0.30	0.11	26.7
5.28	0.33	0.12	24.2
5.52	0.35	0.13	23.2
10.00	0.63	0.23	12.8
11.00	0.69	0.26	11.6
11.20	0.70	0.26	11.4
12.00	0.75	0.28	10.7
16.00	1.00	0.38	8.0
20.00	1.25	0.47	6.4
20.80	1.30	0.49	6.2
24.00	1.50	0.56	5.3
28.00	1.75	0.66	4.6
32.00	2.00	0.75	4.0
40.00	2.50	0.94	3.2
43.20	2.70	1.00	3.0

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WARRANTY STATEMENT

SINON USA, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. To the extent allowed by law, all such risks shall be assumed by Buyer and User. To the extent allowed by law, the exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product. SINON USA, Inc. makes no warranties of merchantability or of fitness for a particular purpose or for any other expressed or implied warranty except as stated above.

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Manufactured by: Sinon USA, Inc.
1080 Carol Lane, Suite 264
Lafayette, CA 94549

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ROUTING & TRANSMITTAL SLIP

January 12, 2006

TO: (Name, office symbol, room number, building,
Agency/Post)

Initials

Date

1. Donald Stubbs Deputy Director RD (Review)

DS

1.12.06

2. Lois Rossi, Director RD (Review)

LR

1.12.06

3. Jim Jones Director OPP (Signature)

JJ

1/17

4.

5.

	Action	File	Note And Return
X	Approval	For Clearance	Per Conversation
	As Requested	For Correction	Prepare Reply
	Circulate	For Your Information	See Me
	Comment	Investigate	Signature
	Coordination	Justify	

REMARKS

DECISION MEMORANDUM SINON's PARAQUAT END USE PRODUCT REGISTRATION

Registration Division

JAN 18 2006

0082
DATE RECEIVED

FROM: (Name, org. symbl, Agency/Post)

Room No.-Bldg.
239

Jim Tompkins

Phone No.
305 5697

Page _____ is not included in this copy.

Pages 53 through 60 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☒ Internal deliberative information.
- ☐ Attorney-Client work product.
- ☐ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.



Robert Butz
<butz@chemreg.com>

01/18/2006 12:09 PM

To Hope Johnson/DC/USEPA/US@EPA

cc

bcc

Subject Study Sinon will cite for Technical Reg. # 70552 -1

Hope,

As you requested, I have reviewed Sinon's responses in the past few months and we agree we will cite MRID 40943704, a poultry feeding study, guideline # 171-4(j) or 860.1480, and will supplement our offer to pay to Syngenta appropriately.

We are prepared to submit a revised data matrix forthwith.

--Bob Butz
Robert Butz, Ph.D.
ChemReg International
1990 Old Bridge Road, Suite 201
Lake Ridge, VA 22192

Phone: 703-492-0541
Fax: 703-492-0668
Email: butz@chemreg.com

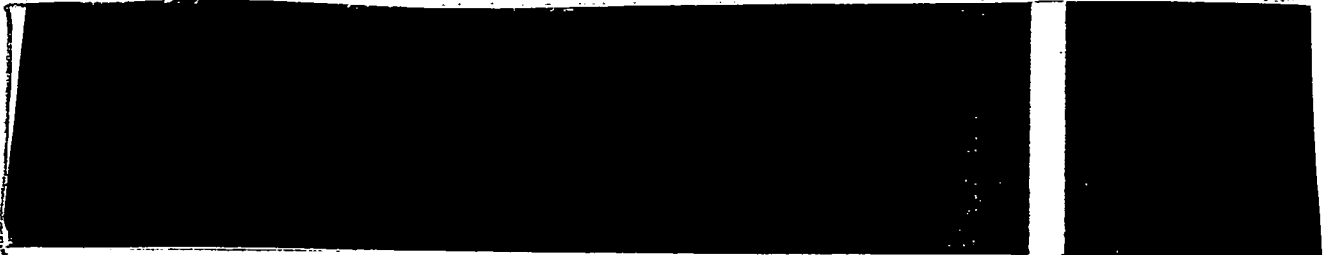
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Jim
Tompkins/DC/USEPA/US
01/18/2006 02:30 PM

Jim Jones/DC/USEPA/US@EPA, Lois
To Rossi/DC/USEPA/US@EPA, Donald
Stubbs/DC/USEPA/US@EPA
cc Angela Huskey/DC/USEPA/US@EPA
bcc Hope Johnson/DC/USEPA/US
Subject Fw: Registration of Sinon's Paraquat End Use Product
82557-R



Jim Tompkins
Team Leader 25
Herbicide Branch
Registration Division

Phone 703 305 5697
Fax 703 308 1825

E-mail Tompkins.jim@EPA.GOV

— Forwarded by Jim Tompkins/DC/USEPA/US on 01/18/2006 02:19 PM —



Jim
Tompkins/DC/USEPA/US
01/18/2006 01:21 PM

To Robert Butz <butz@chemreg.com>
cc
Subject Re: Registration of Sinon's Paraquat End Use Product
82557-R

EPA cannot make a determination under 3(c)(7)(A) because the Agency cannot make the necessary findings required by that statutory provision. Under FIFRA 3(c)(7)(A)(ii), the Agency must determine that “approving the registration or amendment in the manner proposed by the applicant would not significantly increase the risk of any unreasonable adverse effect on the environment.” As support for the registration of their new formulation, Syngenta submitted various studies that raise a question whether granting the registration you requested would significantly increase the risk of any unreasonable adverse effect on the environment (i.e., result in

Internal deliberative information has been removed

2 unnecessary deaths per year).

Therefore, the Agency has converted this application to a 3(c)(5) application. Under this provision, based on the information before the Agency at this time, EPA can only grant you a time-limited registration that will terminate upon the cancellation of EPA Reg. No. 100-1074, subject to the same conditions as in any cancellation order for EPA Reg. No. 100-1074. As long as EPA Reg. No. 100-1074 remains on the market, EPA can determine that granting your registration would not cause unreasonable adverse effects on the environment. However, EPA anticipates that EPA Reg. No. 100-1074 will be cancelled shortly after April 26, 2006, as requested by Syngenta. We cannot make a finding that your product would not cause unreasonable adverse effects on the environment beyond that point.

You can apply to remove the time limitation. The Agency would remove that limitation if you can demonstrate that your product does not pose

unreasonable adverse effects on the environment when compared to the new paraquat formulation registered to Syngenta, EPA Reg. No. 100-1217. We

are willing to sit down with you and discuss ways to do this.

In order to grant a registration under 3(c)(5), Sinon must resolve an outstanding data issue. The Agency has reviewed that data

necessary to make a registration decision and concluded that Sinon must submit or make an offer to pay for the studies outlined below before a 3(c)(5)

registration can be granted.

Acute 5-day Contact and Oral toxicity of paraquat end use product to Honey Bees. May be satisfied by making an offer to pay for MRID43942603.

Short-term field soil dissipation in the USA for paraquat end use product. May be satisfied by making an offer to pay for MRID 41293202.

Residue transfer study with laying hens fed on a diet containing paraquat. May be satisfied by making an offer to pay for MRID 40943704.

A second Developmental Toxicity Study in the Rat. Maybe satisfied by making an offer to pay for MRID 43964701.

Please advise me as soon as possible if Sinon is willing to accept the 3(c)(5) time limited registration and how Sinon will resolve the outstanding data issue

that will permit me to issue a registration under 3(c)(5).

Jim Tompkins
Team Leader 25
Herbicide Branch
Registration Division

Phone 703 305 5697
Fax 703 308 1825
E-mail Tompkins.jim@EPA.GOV

Jim Tompkins
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Company Name Here

Fax

*Faxed
1/18/06
1455 hrs*

To: ROBERT BUTZ

From: Jim Tompkins

Fax: 703 492 0668

Pages: 3

Phone: 703 492 0541

Date: 1/18/2006

Re: Sinon USA Paraquat Registration

CC: [Click here and type name]

☒ **Urgent**

☐ **For Review**

☐ **Please Comment**

☒ **Please Reply**

☐ **Please Recycle**

• **Comments:**

65



Jim
Tompkins/DC/USEPA/US
01/18/2006 01:21 PM

To Robert Butz <butz@chemreg.com>
cc
bcc Hope Johnson/DC/USEPA/US
Subject Re: Registration of Sinon's Paraquat End Use Product
82557-R

EPA cannot make a determination under 3(c)(7)(A) because the Agency cannot make the necessary findings required by that statutory provision. Under FIFRA 3(c)(7)(A)(ii), the Agency must determine that "approving the registration or amendment in the manner proposed by the applicant would not significantly increase the risk of any unreasonable adverse effect on the environment." As support for the registration of their new formulation, Syngenta submitted various studies that raise a question whether granting the registration you requested would significantly increase the risk of any unreasonable adverse effect on the environment (i.e., result in 2 unnecessary deaths per year).

Therefore, the Agency has converted this application to a 3(c)(5) application. Under this provision, based on the information before the Agency at this time, EPA can only grant you a time-limited registration that will terminate upon the cancellation of EPA Reg. No. 100-1074, subject to the same conditions as in any cancellation order for EPA Reg. No. 100-1074. As long as EPA Reg. No. 100-1074 remains on the market, EPA can determine that granting your registration would not cause unreasonable adverse effects on the environment. However, EPA anticipates that EPA Reg. No. 100-1074 will be cancelled shortly after April 26, 2006, as requested by Syngenta. We cannot make a finding that your product would not cause unreasonable adverse effects on the environment beyond that point.

You can apply to remove the time limitation. The Agency would remove that limitation if you can demonstrate that your product does not pose

unreasonable adverse effects on the environment when compared to the new paraquat formulation registered to Syngenta, EPA Reg. No. 100-1217. We

are willing to sit down with you and discuss ways to do this.

In order to grant a registration under 3(c)(5), Sinon must resolve an outstanding data issue. The Agency has reviewed that data

necessary to make a registration decision and concluded that Sinon must submit or make an offer to pay for the studies outlined below before a 3(c)(5)

registration can be granted.

Acute 5-day Contact and Oral toxicity of paraquat end use product to Honey Bees. May be satisfied by making an offer to pay for MRID43942603.

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Please advise me as soon as possible if Sinon is willing to accept the 3(c)(5) time limited registration and how Sinon will resolve the outstanding data issue

that will permit me to issue a registration under 3(c)(5).

Jim Tompkins
Team Leader 25
Herbicide Branch
Registration Division

Phone 703 305 5697
Fax 703 308 1825
E-mail Tompkins.jim@EPA.GOV

ped restrictions:

ATTACHMENT:

Label Changes Required for 82557-R Paraquat SL Label

- Add an appropriate EPA Establishment # to the label (condition of registration)
- ✓ Change the order of the FIRST AID statements to the following: IF SWALLOWED, IF INHALED, IF IN EYES, IF ON SKIN OR CLOTHING
- ✓ In the section FIRST AID statements, subsection IF INHALED, change the word "Stanching" to "Stenching"
- ✓ Change the PRECAUTIONARY STATEMENTS to the following: "DANGER. May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist respirator. Causes irreversible eye damage. Wear protective eyewear. Do not get in eyes or on clothing. Avoid contact with skin.
IMPORTANT: Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin."
- ✓ Change the heading "PERSON PROTECTIVE EQUIPMENT (PPE)" to "PERSONAL PROTECTIVE EQUIPMENT (PPE)".
- ✓ In the section PPE, under Mixers and Loaders Must Wear, remove "protective eyewear," as a face shield is already required and listed.
- ✓ Remove "DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS." from before the Engineering Controls section.
- ✓ Add the following statements to the ENVIRONMENTAL HAZARDS section in the 2nd paragraph: "Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion."
- ✓ Add the following statement to the section Physical And Chemical Hazards on page 4, "This product is compatible with high density polyethylene and rubber lined steel containers."
- ✓ On page 6, before the subheading "Information on Droplet size" add the heading "Aerial Drift Reduction Advisory Information"
- ✓ On page 9, in the section Rates of Paraquat SL Herbicide, the second sentence, remove "when weeds are dense or larger" from the end of the sentence as it is repetitive information. Also, change the last sentence to "Do not exceed 0.50 lbs a.i./A in a minimum of 30 gallons of spray for broadcast applications with backpack sprayers."
- ✓ On page 9, in the section Spray Volumes, change the first sentence to "With each use, follow the recommended minimum spray volumes listed in the following tables."
- ✓ On page 10, change the tank mixture "Lariate" to "Lariat"
- ✓ Change the statements "Read the respective product labels for Directions for Use" on page 11 to "Always refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions." Use this statement throughout the label

✓ in the following tables as well.

✓ On page 12, change "damage" to "damaged" in the 7th bullet

✓ On page 12, in the section Alfalfa-California only New Seedlings, change "Cut or harvest 70 days after application" to "Do not cut or harvest within 70 days after application."

✓ Add the statement "Alfalfa foliage present at time of application will be burned."

✓ On page 12, in the section Alfalfa-Preplant or Preemergence (no-till or conventional planting) add the statement "Crop plants emerged at time of application will be killed."

✓ On page 12, in the section Alfalfa-Dormant season established plantings, change the statement "Cut or harvest after 42 days of application" to "Do not cut or harvest within 42 days after application."

✓ On page 13, in the section Alfalfa-Dormant season Tank mix with Velpar L, change the statement "Crop injury may occur if stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought or frost may increase the chances of crop injury." to "Increased chances of crop injury may occur due to stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought, or frost."

✓ On page 13, in the section Alfalfa Dormant season, add the minimum total spray per acre listing of "Air 5 gals" for the rows "on established plantings-Region B" and "On fall-seeded newly established stands less than 1 year old- Region A".

✓ On page 13, in the section Alfalfa Dormant season, in the 5th bullet add the statement "Green alfalfa foliage present at time of application will be burned."

✓ On page 14, in the section Alfalfa (For use in only the following states: ID, MT, NV, OR, UT, WA, WY) change the statement "harvest at least 4 days after application" to "Do not harvest until at least 4 days after application."

✓ On page 14, in the section Alfalfa (For use in only the following states: ID, MT, NV, OR, UT, WA, WY), in the 5th bullet, change "Does not" to "Do not" in the second sentence.

✓ On page 14, in the section Alfalfa (For use in only the following states: ID, MT, NV, OR, UT, WA, WY), change the last bullet to "Remove ALL Paraquat SL Herbicide/Reglone treated alfalfa seed screenings from the feed market because all screenings from the alfalfa seed processing are prohibited from feed channels."

✓ On page 16, in the section ARTICHOKE (globe) change the statement "Apply at least 7 days apart." to "Applications must be made at least 7 days apart." Change the statement "Harvest 24 hours after last application" to "Do not harvest within 24 hours of last application."

✓ On page 16, in the section Asparagus (preemergence to established plantings at least 2 years old) change the second bullet to "Applications should be made prior to emergence of the crop or after last harvest."

✓ On page 17, change "not for in California" to "NOT FOR USE IN CALIFORNIA". Also add this statement after the "Dry Peas" listing. Add "Lima beans" to the Dry Beans listing. Change the 3rd bullet to "Use a single application of the higher rate for vining type of beans or bush type of lush growth." In the fourth bullet the sentence is cut off. Add the following to the last sentence "than 2 applications per year or exceed a total of 1.3 pints per acre. Add an additional bullet that states "Not registered for use on dry beans and dry peas in California."

- ✓ On page 17, in the section BERRIES, add "boysenberries" to the berry listing.
- ✓ On page 18, in the section Cacao, change the statement "To prevent injury use a shield for young trees to prevent sprays from contacting cacao plants" to "Use a shield for young trees to prevent spray to contact cacao plants, as injury may result."
- ✓ On page 18, in the section Cassavas, Taniers and Yams, change the 4th bullet to "Prevent injury to crop by preventing spray **from** contacting crop."
- ✓ On page 18, in the General Information for Chemical Fallow section, change the 5th bullets last sentence to "Refer to the 2,4-D ester (low volatile), Banvel or residual herbicide label(s) for rates of application, directions for use, limitations, and restrictions."
- ✓ On page 18, in the General Information for Chemical Fallow section, change the 6th bullet to the following "It is permissible to tank mix with registered residual herbicide combinations other than those listed for extended weed control during the fallow period."
- On page 18, in the General Information for Chemical Fallow section, add the following statement "The minimum total spray per acre allowed is 5 gallons for ground and 5 gallons for air application."
- Remain consistent in the entire table by adding a PHI column.
- ✓ On page 19, in the section Chemical Fallow (Continuous wheat 2-3 month recropping interval) change the rate for weeds 3-6" from 1.7-2.7 pts to 1.7-2.0 pts. Change the statement (refer to "General Information" section" to "(Refer to the Chemical Fallow General Information section)"
- ✓ On page 19, for the last four chemical fallow sections, add the following statement to each "Refer to the Chemical Fallow General Information section"
- ✓ On page 19, in the section Chemical Fallow Wheat-Fallow-Wheat Rotations (Fall applied after harvest) change "12-13 months later" to "12-14 months later". Change the rate for weeds 6" from 2.2.7 to 2-2.7 pts. Change the 3rd bullet to "Control of volunteer wheat and downy brome increases when applications are made late August or early September." Remove "improved" from the 5th bullet. Revise the last bullet to "Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions."
- ✓ On page 19, in the section Chemical fallow Wheat-fallow-wheat rotations (Spring applied seeded 3-5 months later), change the rate for weeds 6" from 2.2.7 pts to 2-2.7 pts. Change the 5th bullet to "For **burndown and residual control** of grass and broadleaf weeds, tank mix with metribuzin (Sencor 75DF/Lexone)." Change the last bullet to "Refer to the metribuzin (Sencor 75DF/Lexone) label for rates of application, directions for use, limitations, and restrictions."
- ✓ On page 19, in the section Chemical Fallow Wheat-Annual Crop-Wheat rotations (fall applied in wheat stubble), change the 2nd bullet second sentence to "Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions."
- ✓ On page 19, in the section Chemical Fallow Wheat-Annual Crop-Wheat rotations (spring applied prior to planting an annual crop), change the rate for weeds 6" from 2.2.7 to 2-2.7 pts. In the second bullet, change the second sentence to "Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions."
- On page 20, in the section CLOVER AND OTHER LEGUMES, remove the statement "If

✓ ryegrass, shepherdspurse, sowthistle or groundsel are present, use the high rate" from the Weeds column and place in a bullet under the Precautions section with the preceding statement "IN CALIFORNIA:" Change the 2nd bullet to "Applications should be made during late fall or winter months after the late fall cutting and before first spring cutting." Change the third bullet to "Do not apply if regrowth after grazing or cutting is more than 2".

✓ On page 21, in the section CORN (Tank mixes for no-till/reduced till) change the last bullet to "Paraquat SL Herbicide may also be tank mixed with Ambush insecticide. Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions, and if these products can be applied by air."

✓ On page 22 in the section FIELD CORN, POPCORN, SWEET CORN, SEED CORN, change the 8th bullet to "Corn plants shorter than 10" may be injured and not recover." Change the very last bullet to "Injury to corn foliage will occur if sprayed. However, corn will recover and develop normally."

✓ ON page 23, in the section FIELD CORN, POPCORN, SEED CORN, change the 4th bullet rate from 1.5 pts to 1.3 pts. (1.3 pts is the maximum rate allowed.)

✓ On page 24, in the section Cotton-other tank mixes, place a parentheses after "(Preplant only", and place "Meturon Herbicide" on it's own line.

✓ On page 24, change the heading COTTON Harvest Aid Precautions to "COTTON Harvest Aid RESTRICTIONS". Remove the statement "(applies to all sections)."

✓ On page 28, in the section GRASSES, change the 4th bullet to "Applications may be repeated as necessary (but only up to 3 applications per year) prior to grass emergence."

✓ On page 29, in the section HOPS, change the 7th bullet to "Spray only the basal 2 ft. of the vines for sucking and stripping. Repeat as necessary, but only up to 3 applications per season."

• *et* Please note: the section PERSIMMON is missing from the label.

✓ On page 32, change the 7th bullet to "DO NOT exceed 2.6 pints per acre per season."

✓ On page 33, in the section RICE, change the minimum total spray per acre allowed for ground from 5 gals to 10 gals.

✓ On page 33, in the section Small Grains (Wheat Only), change the minimum total spray per acre allowed for ground from 5 gals to 10 gals.

✓ On page 36, in the section SOYBEANS, the 4th bullet statement has been cut off. Add "fall panicum, use 5.3 fl oz of Paraquat SL Herbicide" to the end of the sentence.

✓ On page 36, in the section SOYBEANS, change the 9th bullet to "If necessary, make a second and final application 7-14 days later."

✓ On page 38, lengthen the row column width so that the words are not cut off.

✓ On page 38, in the section SUGARCANE, change the first bullet to "Do not make more than 2 applications per year, except in Florida and Texas in which the maximum number of applications allowed is 1 per year."

• On page 38, in the section SUGARCANE, add "Harvest Aid to the column Use Pattern for the row "Florida and Texas".

• On page 38, in the section SUNFLOWER, change the rate per acre from 1.7-.27 to 1.7-

2.7 pts.

- On page 38, in the section TREE PLANTATION ESTABLISHMENT, in the second bullet change "weds" to "weeds."
- On page 39, in the section TREES AND VINES, add "^{NO}Pecans" to the list of trees and vines. Add the following bullet in the restrictions section "For peaches: do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season."
- On page 40, in the section VEGETABLES, add "Endive (Escarole) to the list of vegetables. Change the 4th bullet to "For heavier weed infestations, use the higher rate." as the current statement is repetitive.
- On page 42, in the section Tree Selection, change the statement "Trees should be selected from stands on sites not subject to stress from periods of extreme drought stress because the desiccating effect of Paraquat SL Herbicide " to "Trees should be selected from stands on sites not subject to stress from periods of extreme drought because the desiccating effect of Paraquat SL Herbicide"
- On page 43, widen the width of the column crop so that words are not cut off.
- On page 43, in the section NONCROP USES, change the last bullet to "Avoid spray contact with the foliage of ornamentals or desired plants."
- On page 45, in the section For Prickly Pear Desiccation in Pastures, change the second bullet to "Hand-held equipment such as knapsacks, backpack sprayers, **pump-up pressure sprayers, hand-guns and handwands** can be used to direct the spray onto weed foliage for spray to wet applications."
- On page 45, in the section For Prickly Pear Desiccation in Pastures, change the 4th bullet to "Completely and uniformly cover all green prickly pear foliage with spray."
- On page 47 in the WARRANTY section, add the statement "To the extent allowed by law" before the statements "All such risks shall be assumed by Buyer and User." and "The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product."

Reviewed label 12/12/05

**RESTRICTED USE PESTICIDE
DUE TO ACUTE TOXICITY**

**FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS
UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED
BY THE CERTIFIED APPLICATOR'S CERTIFICATION.**

PARAQUAT SL HERBICIDE™

*Defoliant and desiccant herbicide
for the control of weeds and grasses and as a harvest aid.*

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID.
- SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE STENCHING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'- Bipyridinium dichloride)43.8%

Other Ingredients:56.2%

Total:..... 100.0%

Contains 3.0 pounds paraquat cation per gallon as 4.143 pounds salt per gallon. Contains stench (odor) and emetic.

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO



POISON

**Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)**

EPA Reg. No. 82557-R

EPA Est.:

Net Contents:

[FRONT PANEL CONTINUED]

FIRST AID

Contains Paraquat, a Bipyridinium Herbicide

Have the product or label with you when calling a poison control center or doctor, or going for treatment.

If swallowed

II

- Call a poison control center or doctor **IMMEDIATELY** for treatment advice.
- **SPEED IS ESSENTIAL.** Immediate medical attention is required. If available, give an absorbent such as activated charcoal, bentonite or Fullers Earth.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

If inhaled

I

- Move person to fresh air.
- The odor of this product is from the stenching agent, which has been added, not from the paraquat.
- If person is not breathing, call 911 or an ambulance.
- Call a poison control center or doctor for treatment advice.

If in eyes

I

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

If on skin or
clothing

III

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN

Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an absorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat; however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

HOT LINE NUMBER

For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call CHEMTREC 1-800-424-9300.

See back/side panel[s] for additional precautionary statements.

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER. May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist respirator. Causes irreversible eye damage. Wear protective eyewear. Do not get in eyes or on clothing. Avoid contact with skin. **IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

*harmful
if absorbed
through skin*

Personal Protective Equipment (PPE)

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Shoes plus socks
- Protective eyewear
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

Mixers and loaders must wear:

- Long-sleeved shirt and long pants
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Shoes plus socks
- Dust mist NIOSH-approved respirator with ANY N, R, P, or HE filter.
- Chemical resistant apron
- Face Shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This product is toxic to wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs because it desiccates all green plant tissue. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Refer to the local state laws, regulations, guidelines, and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial application during periods of thermal inversion.

Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

DIRECTIONS FOR USE

Restricted Use Pesticide. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to use of this product that are covered by the Worker Protection Standard.

For preplant or preemergence (broadcast or banded), chemical fallow, postemergence directed spray applications, early postemergence broadcast in peanuts and dormant season applications, and "between cutting" applications in alfalfa: Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For harvest aid and desiccation application: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow others to enter the treated area until sprays have dried.

AVOID working in spray mist.

KEEP all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Store in original container and place in a locked storage area. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. Store at temperatures above 32°F. For Emergencies involving a Spill, Leak, Fire, Exposure, or Accident, Contact: CHEMTREC at (800) 424-9300.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not reuse container as container is not safe for food, feed or drinking water! Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INSTRUCTIONS AND INFORMATION

Do not apply this product through any type of irrigation system.

When PARAQUAT SL HERBICIDE™ is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive SHOULD be used. Always refer to the additive label for rates of applications, directions for use, limitations, and restrictions.

Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

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The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

AERIAL DRIFT REDUCTION ADVISORY INFORMATION ✓ **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environment conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle that is designed for the intended application. With most nozzle types, narrower spray angles produce droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set-up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

GENERAL INFORMATION**APPLICATION**

PARAQUAT SL HERBICIDE™ is a contact herbicide is for control or suppression of a broad spectrum of emerged weeds including most annual small broadleaf and grass weeds. It can also be used to suppress perennial weeds by destroying green foliage and as a desiccant/defoliant at harvest.

Complete coverage of target weeds is necessary to get good control because PARAQUAT SL HERBICIDE™ is a contact-type herbicide. It is also necessary to obtain complete coverage for good crop desiccation and defoliations. Undesirable weed control and undesirable crop desiccation/defoliation will result if improper application technique and/or application to large, stressed, or mown weeds are made. Refer to the following details for specific application instructions.

PARAQUAT SL HERBICIDE™ is a liquid formulation containing 3 lbs. of active ingredient per gallon. It contains a nontoxic odor to help prevent accidental ingestions. It also contains an emetic (an agent which will induce vomiting if the product is swallowed).

Through coverage of all green foliage is required for efficacious weed control and crop defoliation and desiccation because PARAQUAT SL HERBICIDE™ requires actively growing green plant tissue to function. Drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines are unaffected by application with PARAQUAT SL HERBICIDE™.

There is no residual soil activity to affect later-planted crops or later germinating weeds because clay and organic matter rapidly tie up PARAQUAT SL HERBICIDE™.

ROTATIONAL CROPS

After the last application PARAQUAT SL HERBICIDE™, all rotational crops may be planted immediately.

RAINFASTNESS

Rain occurring 30 minutes or more after application will have no effect on the activity of PARAQUAT SL HERBICIDE™ because it is rapidly absorbed by the weed foliage.

USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

The following should always be added and be used at the recommended rates or there will be a reduction in efficacy of PARAQUAT SL HERBICIDE™.

Nonionic Surfactant: Either add a nonionic surfactant containing 50-74% surface-action agent at 0.25% v/v (2 pts./100 gals.), or add nonionic surfactant containing 75% or more surface-active agent at 0.125% v/v (1 pt./100 gals.), of the finished spray volume for groups applications. Add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume for aerial applications.

Crop Oil Concentrate: For ground applications, add a nonphytotoxic crop oil concentrate that contains 15-20% approved emulsifier, with 1.0% v/v (1 gal./100 gals.) of the finished spray volume. Add 1 pt. of crop oil concentrate per acre for aerial applications. For cotton harvest aid, do not use crop oil concentrate when using PARAQUAT SL HERBICIDE™.

NOZZLE SELECTION

The use of flat-fan nozzles is the most effective application of PARAQUAT SL HERBICIDE™. The use of flood nozzles may result in a reduction of weed control due to inadequate coverage because they produce large uneven droplets.

Use only flat fan nozzles when spraying less than 20 gallons of spray carrier per acre using the following table.

Table 1. Recommended Nozzle Type and Spray Pressures and Setup

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

Reduced control will result if nozzles, pressures, or setups differ from the above chart.

SPRAY CARRIER

PARAQUAT SL HERBICIDE™ may be inactivated by muddy water, or suspension-type fertilizers containing clay. Therefore, always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying PARAQUAT SL HERBICIDE™. Never use suspension-type fertilizers containing clay as the spray carrier. Always use the higher rate of PARAQUAT SL HERBICIDE™ and surfactant if using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier.

Note: It is important that when using liquid fertilizers such as 28% N as a spray carrier, that nonionic surfactant still be used with PARAQUAT SL HERBICIDE™. The use of liquid fertilizer carriers are not substitutes for surfactants.

RATES OF PARAQUAT SL HERBICIDE™

With each use, follow recommended rates listed in the following tables. When weeds are larger or are dense, use the higher label rates. For use as a harvest aid, use higher rate when crop vegetation is dense. Do not exceed 0.50 lbs. a.i./A in a minimum of 30 gallons of spray for broadcast applications with backpack sprayers. ✓

SPRAY VOLUME

With each use, follow recommended minimum spray volumes listed in the following tables. Spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage because the volumes listed are minimum volumes only. ✓

TARGET WEEDS SHOULD NOT EXCEED SIX INCHES IN HEIGHT WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE.

Application Timing

Applications should be made to small emerged weeds. Larger weeds more than 6 inches in height may be more difficult to control than weeds 1 – 6 inches in height. If possible, when green foliage is removed either from grazing or mowing, allow the weeds to grow 2-4 inches in height. Also, during harvesting forage or grain crops before spraying, weeds present in the field are also cut. Therefore, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height allowing sufficient green foliage to remain for applications.

BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

The best results occur for control of grass cover crops or volunteer cereals, when PARAQUAT SL HERBICIDE™ is applied prior to tillering or after boot stage, especially with a wheat cover crop or volunteer wheat. Complete control may not be achieved with treatments made between tillering and boot stage. Complete control of perennial cover crops should not be expected.

ENVIRONMENTAL CONDITIONS

This product is active over a wide range of environmental conditions such as cool (below 55°), cloudy or overcast weather. However these conditions will slow the activity of PARAQUAT SL HERBICIDE™.

SPOT SPRAYING

Refer to the following table if only small areas are to be sprayed with labeled applications.

Mixing Instructions for Small Quantities for Spot Spraying

If the Broadcast Rate Per Acre for PARAQUAT SL HERBICIDE™ is:	Add The Following Amount of PARAQUAT SL HERBICIDE™ to 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Add 1/3 - 1/2 fl. oz. of a nonionic surfactant for each gallon of spray at all times. Thoroughly wet the foliage, but not to the point of runoff when spot spraying in this manner.

TANK MIXING: ENHANCED BURNDOWN OF DIFFICULT-TO-CONTROL WEEDS AND FOR RESIDUAL WEED CONTROL**Photosynthetic Inhibitor Herbicides**

To control difficult weeds, tank mix PARAQUAT SL HERBICIDE™ with other herbicides. The addition of other photosynthetic inhibitors (PSI) herbicides will slow the activity of PARAQUAT SL HERBICIDE™. This allows PARAQUAT SL HERBICIDE™ to thoroughly distribute throughout a treated leaf, thus achieving better control than if PARAQUAT SL HERBICIDE™ is applied alone.

PARAQUAT SL HERBICIDE™ may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide
Atrazine Herbicide
Bicep MAGNUM® Herbicide
Bicep Lite II MAGNUM® Herbicide
Canopy® Herbicide

✓
Lariat® Herbicide
Lexone® Herbicide
Linex® Herbicide
Lorox® Herbicide
Lorox Plus™ Herbicide

Princep® Herbicide
Sencor® Herbicides

Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.

Improved Weed Control with PSIs

The addition of a PSI herbicide will help improve the control of difficult weeds listed below. Make a second application for best results.

Barnyardgrass	Kochia	Perennial weeds
Broadleaf signalgrass	Lambsquarters	(suppression only)
Cheatgrass	Malva (cheeseweed)	Prickly lettuce
Cocklebur	Marestail	Sedges
Fall panicum	Morningglory	Tansymustard
Giant ragweed	Pennsylvania smartweed	Velvetleaf
Knotweed		Volunteer wheat

Improved Control of Perennial and Annual Broadleaf Weeds

Tank mixing with labeled 2,4-D ester (Low Volatile), 2,4-DB or Banvel® herbicide will help improve control when perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc., or difficult to control annual broadleaf weeds such as giant ragweed or morning glory are present. Reduced grass control may be achieved when tank mixing the amine formulation of 2,4-D with PARAQUAT SL HERBICIDE™.

Order of Tank Mixing

It is advisable to tank mix PARAQUAT SL HERBICIDE™ and other listed products as follows:

1. Fill spray tank ½ full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add PARAQUAT SL HERBICIDE™ to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to other pesticide products labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions. ✓

It is advisable to perform a jar test to check physical compatibility when using different formulation of the herbicides listed on this label. ^a

GENERAL PRECAUTIONS AND RESTRICTIONS

EQUIPMENT

PARAQUAT SL HERBICIDE™ is corrosive to aluminum. Thoroughly flush all aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift with water immediately after use.

The activity of PARAQUAT SL HERBICIDE™ may be reduced in dry areas where dust stirred up by high winds or equipment tires can coat weed or plant leaves. Therefore, avoid applications in extremely dusty conditions.

LIMITATIONS AND PRECAUTIONS

- Unless otherwise indicated, PARAQUAT SL HERBICIDE™ will severely injure or kill crop plants emerged at time of application if they come in contact with sprays.
- Do not pasture livestock in treated fields or feed treated foliage in cotton when this product is used as a cotton harvest aid.
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- Do not apply to soils lacking clay minerals such as peat, muck, pure sand, artificial planting media for preplant and preemergence (to the crop) uses.
- To enable maximum weed and grass emergence prior to treatment, seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible.
- Avoid disturbing soil when seeding or transplanting.
- Transplanted plants may become damaged when they come in contact with plastic mulch used for preplant weed control and that has been treated with this product. To prevent damage to the crop, sufficient wash-off such as rainfall or sprinkler irrigation prior to planting may be needed.
- PARAQUAT SL HERBICIDE™ will be ineffective in controlling or suppressing weeds and grasses that have emerged after application.

APPLICATION INSTRUCTIONS

Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA (California only) New seedlings		Broadcast	0.7-1.3 pts. See Table 2	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> • Do not make more than one application per year. • Applications should be made during late winter or early spring. • Do not cut or harvest within 70 days after application. • Alfalfa foliage present at time of application will be burned. • Replanting may be needed due to the reduction of seedling stands. • Do not apply to seedling alfalfa grown for seed.
ALFALFA Preplant or Preemergence (No-till or conventional planting)		Broadcast or Banded Over-Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> • Do not make more than 2 applications per year. • Apply prior to emergence of the crop. Avoid disturbing soil when seeding. • Crop plants emerged at time of application will be killed.
ALFALFA Dormant season Established plantings Region A – See table at end of Alfalfa section	Weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.	Broadcast	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> • Do not make more than one application per year. • Fall regrowth: Do not apply if last fall cutting is greater than 6". Spring regrowth: Do not apply if last cutting is greater than 2". • After the crop is dormant, apply to well-established stands that are at least 1-year old. • Yield of first cutting may be reduced because alfalfa foliage present at the time of application will be burned. • Do not cut or harvest within 42 days after application. • For improved and longer-lasting weed control, tank mix with metribuzin (Lexone or Sencor). Always refer to the metribuzin label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA Dormant season Tank Mix with Velpar® L- Herbicide Region A – See table at end of Alfalfa section	Weeds including chickweed, downy brome and tansymustard.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> Do not make more than 2 applications per year. When weeds are less than 4 inches tall apply at 0.7 pt. rate PARAQUAT SL HERBICIDE™ Mix PARAQUAT SL HERBICIDE™ with 1-2 qts. of Velpar L per acre. Use lower rate of Velpar L on loamy sands or sandy loams. Always refer to the Velpar L label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. During the dormant season, make one application to established alfalfa stands. Fall regrowth: Do not apply if last fall cutting is greater than 6". Spring regrowth: Do not apply if last cutting is greater than 2". Do not apply to alfalfa during the first season after seeding. Temporary chlorosis may occur on alfalfa regrowth. Increased chances of crop injury may occur due to stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought or frost. DO NOT USE on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result. Do not cut or harvest within 42 days of application.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA Dormant Season On established plantings: Region B – See table at end of Alfalfa section. On fall-seeded newly established stands less than 1-year-old: Region A – See table at end of Alfalfa section On fall-seeded newly established stands less than 1-year-old: Region B – See table at end of Alfalfa section	Including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds California: Desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> Do not make more than one application per year. Applications should be made before first spring cutting and during late fall or winter months after the last fall cutting. California: Do not apply if spring regrowth after grazing or cutting is more than 2 inches in Orange and Riverside counties, and all counties north of these counties. All other areas within Region B: Do not apply if regrowth after grazing or cutting is more than 2 inches. Do not harvest within 60 days of application. Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at time of application will be burned. If there is a severe weed infestation, total hay yield of first cutting may be reduced in alfalfa fields and the reduction is typically directly proportionate to the loss of weed weight.  For improved and residual weed control in dormant established (at least 1-year-old) alfalfa, tank mix with metribuzin (Lexone or Sencor). Do not apply tank mix with metribuzin on alfalfa that is less than 1-year old. Always refer to metribuzin label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. California <ul style="list-style-type: none"> If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.
		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALFALFA (East of the Rocky Mountains) Between-cuttings treatment in established plantings. (Includes first year alfalfa)	Broadcast	0.7 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Control of weeds beyond the seedling stage and weed stubble cut off during harvest are less affected by this treatment. Make applications immediately after alfalfa has been removed for hay or silage. Do not treat more than 5 days after cutting. A reduction in first year alfalfa stands and yields may occur if alfalfa is allowed to regrow more than 2 inches. Burning of alfalfa foliage will occur at time of application. Weed control may be reduced where moisture is limited such as in arid climates. Do not cut or harvest within 30 days of application. Apply as needed up to three times during the growing season in addition to a dormant application. Do not make more than 2 applications during the first growing season of first-year alfalfa.
ALFALFA (For use only in the following states: ID, MT, NV, OR, UT, WA, WY)	Broadcast	1.7-2.7 pts.	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not harvest until at least 4 days after application. Do not apply when weather conditions favor drift from treated areas. Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds. Use only on fields in production of alfalfa seed. Do not use on fields producing alfalfa for livestock feed. Do not use any portion of the treated field for human or animal feed, including seed, seed screenings, hay forage, or stubble. Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops. Do not use treated alfalfa seed for sprouting. Tag all alfalfa seed treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix at processing plants with, "NOT FOR HUMAN CONSUMPTION". The grower is responsible for notifying the processing plants of any seed crop treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix. Remove ALL PARAQUAT SL HERBICIDE™ /Reglone treated alfalfa seed screenings from the feed market because all screenings from alfalfa seed processing are prohibited from feed channels.
PARAQUAT SL HERBICIDE™ /Reglone Tank Mix	Broadcast	1.3-2.7 pts. PARAQUAT SL HERBICIDE™/ 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	

ALFALFA : New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only).		
For Control of:	Rate/Acre*	
	For Suppression	For Control
Annual Bluegrass	—	10.7-21.3 fl. oz.
Chickweed	—	10.7-21.3 fl. oz.
Fiddleneck (6 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.
Red Maids (6 inches tall or less)	—	10.7-21.3 fl. oz.
Shepherdspurse	10.7-21.3 fl. oz.	—
Spikeweed (4 inches tall or less)	5.4 fl. oz.	10.7-16.0 fl. oz.
Volunteer Small Grain (8 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.

*Use the 5.4 fl. oz. rate only when alfalfa has at least 3 trifoliate leaves; use the 10.7 fl. oz. rate only when alfalfa has 6 trifoliate leaves; or use rates over 10.7 oz. only when there are 9 trifoliate leaves.

Alfalfa – Regions

REGION A
Alaska California: Counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumas, Sierra, Nevada. Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming

REGION B
Alabama Arizona Arkansas California: All other counties not listed in Region A. Florida Georgia Hawaii Louisiana Mississippi New Mexico North Carolina Oklahoma South Carolina Tennessee Texas

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALMONDS	Directed Spray	0.8-2.7 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Avoid allowing spray to contact green stems (except suckers) or foliage. When spraying around young trees, use a shield or wrap plant. Do not graze treated areas and do not feed cover crops grown in treated areas to livestock. Do not apply when nuts to be harvested are on the ground. Retreatment or spot treatments may be necessary for mature woody weeds, perennial weeds, late germinating weeds and green suckers.
ARTICHOKE (GLOBE)	Directed Spray	1.7-2.7 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed 8 pts. per season. Applications must be made at least 7 days apart. Do not harvest within 24 hours of last application.
ASPARAGUS	Preplant or Preemergence Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Application should be made prior to emergence of the crop. Emerged asparagus at time of application will be killed.
ASPARAGUS Preemergence to established plantings at least 2 years old.	Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made prior to emergence of the crop or after last harvest. Emerged asparagus at time of application will be killed.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
BEANS, DRY NOT FOR USE IN CALIFORNIA Sweet lupin White sweet lupin White lupin Grain lupin Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Tepary beans Urd beans Guar PEAS, DRY NOT FOR USE IN CALIFORNIA Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas Catjang	Harvest-Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic spreader at 1 qt/100 gals. of spray mix. Use a single application of the higher rate for vining type of beans or bush type of lush growth. May also be applied as a split application and may improve vine coverage. However DO NOT make more than 2 applications per year or exceed a total of 1.3 pints per acre. Apply when at least 80% of the pods are yellowing and mostly ripe and when leaves are no more than 40% green of bush type peas or beans or 30% of vine type peas or beans are green. DO NOT apply when weather conditions favor spray drift. To reduce drift, a drift control agent may be included. Not registered for use on dry beans and dry peas in California.
BERRIES Blackberry Blueberry Boysenberry Currant Elderberry Gooseberry Huckleberry Loganberry Raspberry	Postemergence Directed Spray	1.3-2.7 pts.	Ground: 50 gals.	-	<ul style="list-style-type: none"> Do not make more than 5 applications per year. New canes or shoots can be injured. Therefore, apply before their emergence. To prevent crop injury from spray mist, apply as a coarse spray.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CACAO	Directed Spray	1.3-2.7 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Apply when weeds are succulent and growth is from 1-6". Retreatment or spot treatments may be necessary for mature woody weeds, late-germinating weeds and grasses and for perennials. Use a shield for young trees to prevent spray from contacting cacao plants, as injury may result. Do not spray under windy conditions. Do not graze treated areas or feed treated cover crops to livestock.
CASSAVAS, TANIERS & YAMS (Puerto Rico only)	Shielded Post Directed Spray	1.3 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> Cassavas and Taniers: Do not make more than 3 applications per year. Yams: Do not make more than 2 applications per year. Make applications when weeds are succulent and growth is 1-6". Prevent spray from contacting crop to prevent injury to crop. Do not spray under windy conditions. Do not graze treated areas or feed treated forage to livestock.

General Information for Chemical Fallow

- As the density of stubble, crop residue or weeds increases, use higher spray volumes for better coverage.
- To control volunteer wheat or downy brome, fall-applied treatments generally work best with PARAQUAT SL HERBICIDE™. If possible, tank mix with Atrazine for maximum burndown and residual control.
- Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.
- Before applying PARAQUAT SL HERBICIDE™, cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest.
- The addition of dicamba (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds. Always refer to the product label(s) for 2,4-D ester (Low Volatile), dicamba (Banvel), or residual herbicide for rates of applications, directions for use, limitations, and restrictions.
- It is permissible to tank mix with registered residual herbicide combinations other than those listed for extended weed control during the fallow period.
- Weeds and grasses emerging after application and weeds taller than 6 inches will not be controlled.
- Crop plants emerged at the time of application will be killed.
- The minimum total spray per acre allowed is 5 gallons for ground and 5 gallons for air applications.
- Apply 5-60 gallons spray mix per acre by ground application. When applying at <10 GPA by ground:
 - Do not apply with floaters or exceed a speed of 10 mph.
 - Apply with flat fan nozzles at 30-40 psi.
 - Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./acre.
 - By air: apply in 5-10 gals. of spray mix per acre.

• Minimum total spray per acre allowed is 5 gals for ground & 5 gals for air applications.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Continuous Wheat 2-3 Month Recropping Interval	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply at least 45 days before seeding. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow".
CHEMICAL FALLOW Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Spray before weeds produce seeds. Control of volunteer wheat and downy brome increases when applications are made late August or early September. For improved burndown and residual control of weeds, tank mix with Atrazine, Marksman® Herbicide, or Command® Herbicide. For burndown and residual control of grass and broadleaf weed tank mix with metribuzin (Sencor 75DF). Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions. Refer to the section "General Information for Chemical Fallow".
CHEMICAL FALLOW Wheat-Fallow-Wheat Rotations (Spring applied: seeded 3-5 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To conserve moisture, application should be made March 1 to April 15, prior to spring rains. Even though moisture loss is greater when applications are made after the boot stage, volunteer wheat is easier to control after this stage. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section "General Information for Chemical Fallow". For burndown and residual control of grass and broadleaf weeds, tank mix with metribuzin, (Sencor 75DF/Lexone). Always refer to the label for metribuzin (Sencor 75DF/Lexone) for rates of applications, directions for use, limitations, and restrictions.
CHEMICAL FALLOW Wheat-Annual Crop¹-Wheat Rotations (Fall applied in wheat stubble)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For improved burndown and residual weed control, tank mix with Atrazine or Marksman. Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions. Make applications after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before seed production. Applications made late August to November help control volunteer wheat and downy brome. Refer to the section "General Information for Chemical Fallow".

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop¹)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For enhanced burndown and residual weed control, tank mix with Atrazine. Always refer to the respective product label(s) for Atrazine for rates of applications, directions for use, limitations, and restrictions. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide. Refer to the section 'General Information for Chemical Fallow'. Refer to the Atrazine label for recommendations pertaining to soil pH and recropping intervals.

¹Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.

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Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CLOVER AND OTHER LEGUMES Including velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch. Dormant Season On established plantings: Region A – See table at end of Alfalfa section. On established plantings: Region B – See table at end of Alfalfa section. On fall-seeded, newly established stands less than 1-year-old: Region A – See table at end of Alfalfa section. On fall-seeded, newly established stands less than 1-year-old: Region B – See table at end of Alfalfa section.	For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds. California <ul style="list-style-type: none">Use for desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.	Broadcast	1.3-2.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none">Do not make more than 1 application per year.Applications should be made during late fall or winter months after the last fall cutting and before first spring cutting.Do not apply if regrowth after grazing or cutting is more than 2".Do not harvest within 60 days of application.CAUTION: Stand and/or yield reductions may occur when applications are made to clover or other legumes that are not dormant, or have broken dormancy. Therefore, it may be necessary to replant. Burning will occur to green clover or other legumes' foliage present at the time of application.Discoloration and temporary stunting will occur in clover or other legumes foliage present at the time of application.If there is severe weed infestation, the total hay yield of first cutting may be reduced in clover or other legumes fields and is usually directly proportionate to the loss of weed weight. IN CALIFORNIA: <ul style="list-style-type: none">If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.
	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60		
	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60		
	Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60		

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CORN FIELD CORN POPCORN SWEET CORN SEED CORN (Used alone)	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Includes field, fresh sweet, forage, fodder and popcorn. To permit maximum weed and grass emergence, seedbeds should be formed as far ahead of planting and treatment as possible. Seeding should be done with a minimum amount of soil disturbance. Control will not occur when applications are made after weeds and grasses have emerged. However, crop plants emerged at time of application will be killed.
CORN Tank Mixes for No-till/Reduced Till	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.*	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made as broadcast sprays before, during or after planting, but before crop emergence. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control: <ul style="list-style-type: none"> 2,4-D Ester (Low Volatile) Harness® AAtrex/Atrazine® Harness® Xtra Banvel® Lasso® Herbicide Bicep Linex® MAGNUM® Lorox® Bicep Lite II Princep® MAGNUM® Prowl® Herbicide Dual MAGNUM® Simazine® Frontier® Surpass® EC Guardsman® Surpass® 100 Harmony® Extra Topnotch® Herbicide (Preplant only) PARAQUAT SL HERBICIDE™ may also be tank mixed with Ambush® insecticide. Always refer to respective product label(s) for rates of applications, directions for use, limitations, and restrictions. <p>Always refer to respective product label(s) for rates of applications, directions for use, limitations, and restrictions. These products can be applied by air.</p>

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SWEET CORN, SEED CORN	Postemergence Directed Spray (including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made when weeds are actively growing. Use a higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts corn plants. <p>For Hooded Or Shielded Sprayers:</p> <ul style="list-style-type: none"> Use a hooded or shielded sprayer with skids or wheel on the spray boom to maintain spray height in order to prevent excessive crop phytotoxicity. Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. <p>For Directed Spray Without Hooded Or Shielded Sprayers.</p> <p><i>Corn height is measured from soil surface to top of whorl.</i></p> <ul style="list-style-type: none"> Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks. Corn plants shorter than 10" may be injured and not recover. For corn more than 20" tall: Arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks. Injury to corn foliage will occur if sprayed. However, corn will recover and develop normally.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SEED CORN	Harvest Aid Broadcast	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than one application per year. Make ONE (1) application at least 7 days prior to harvest. Apply after the corn is mature. This is indicated by a black layer which forms at the base of the kernels. You may consult your local agricultural authority for help in identifying the black layer. Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v. To desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18" use 1.3 pts. <i>OK</i> Drought stressed plants, especially broadleaf weeds, can be difficult to kill and desiccation may not be complete.
FIELD CORN ONLY (grain, fodder, forage)	Postemergence Directed Spray USDA Witchweed Eradication Program	1.3 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. If regrowth occurs, initiate sprays in late June to early July and repeat in early August. Follow application instructions in post-emergence directed spray section above.
FIELD CORN ONLY (grain, fodder, forage) 2,4-D Amine AE Tank Mix	Postemergence Directed Spray USDA Witchweed Eradication Program	5.4 fl. oz. +0.5 lb. 2,4-D Amine AE	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as directed spray onto grassy weeds and witchweed before witchweed blooms. If regrowth occurs, reapply. Follow application instructions in post-emergence directed spray section above. <p><i>Always refer to respective product label(s) for rates of application, directions of use, limitations and restrictions.</i> <i>OK</i></p>
COTTON (Used alone)	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply prior to, during or after planting, but before crop emergence. For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment. Seeding should be done with a minimum of soil disturbance.
COTTON (California only; Used alone)	Preplant	5.4-10.7 fl. oz.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Goat® Herbicide Tank Mix	Preplant or Fallow Bed Broadcast	1.7-2.7 pts.	Ground: Or Air: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Always refer to the Goat® label for weeds controlled rates of applications, directions for use, limitations, and restrictions.
COTTON Other Tank Mixes	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. For improved residual control or burndown, PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: <ul style="list-style-type: none"> Caparol® Herbicide Cotoran® Herbicide Cotton-Pro® Herbicide Diurone® Dual MAGNUM® Harmony® Extra (Preplant Only) Meturon® Herbicide MSMA Prowl® Zorial® Herbicide When tank mixing with Cotoran DFE or Meturon DFE, follow mixing instructions carefully; maintain constant agitation and see Order of Tank Mixing section of respective labels. When tank mixing with any of the herbicides listed above, always refer to the respective product label(s) for weeds controlled rates of applications, directions for use, limitations, and restrictions.

COTTON Harvest Aid Use Restrictions

- Do not make more than 4 applications per year.
- Do not pasture livestock in treated fields or feed treated foliage.
- Do not apply to cotton within 3 days before harvest.
- Repeat application if necessary. Do not exceed a total of 1.3 pts./A as a harvest aid.
- May be tank mixed with other cotton harvest aid materials known to be effective by a local expert. Unless otherwise instructed in this label, always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.

PARAQUAT SL HERBICIDE™ can be applied in a tank mix with methyl parathion and/or Karate® insecticide. Always refer to the respective product label(s) for rates of applications, directions for use, limitations, and restrictions.

- Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOUTHERN COTTON Harvest aid for bolls opening and defoliation (Tank mix with phosphate and chlorate defoliant)	Broadcast	5.4 fl. oz. + 1 pt. Phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Development of immature bolls will be inhibited. Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations and restrictions.
SOUTHERN COTTON Additional tank mixes for boll opening and defoliation	Broadcast	2.1-3.3 oz.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 4 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with the following products to aid in defoliation and opening of mature bolls. <ul style="list-style-type: none"> Accelerate® Defoliant Def® Defoliant Dropp® Defoliant Ethephon® Plant Growth Regulator Folex® Defoliant Harvade® Harvest Growth Regulator Prep™ PGR Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. Always refer to the tank mix product label(s) for rates of applications, directions for use, limitations, and restrictions.
SOUTHERN COTTON Post Defoliation – To aid in opening of mature bolls and to desiccate green weeds.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. If weed infestation is heavy or dense use higher rate. Apply when 75% or more of bolls are open and remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. After a defoliation or conditioning application has been made, delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking.
WESTERN COTTON Harvest aid for boll opening and early defoliation	Broadcast	3.7-5.4 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. On rank cotton, use higher rate. Do not use more than 5.4 fl. oz of PARAQUAT SL HERBICIDE™ for early defoliation as excessive desiccation may occur. Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB). Development of immature bolls will be inhibited. Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing. Always refer to tank mix product label(s) for rates of applications, directions for use, limitations and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
WESTERN COTTON Harvest aid for boll opening and mid-to-late defoliation	Broadcast	5.4-10.7 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliation and/or other compatible harvest aid products.		3 (Alone)	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use the 10.7 fl. oz. rate of PARAQUAT SL HERBICIDE™ in desert cotton areas or on rank vigorous cotton. Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB). Development of immature bolls will be inhibited. Always refer to tank mix product label(s) for rates, applications, directions for use, limitations and restrictions.
COTTON Stripper or Spindle Harvested Harvest aid for defoliation and boll opening.	Broadcast	2.1-7.5 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature. DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED, SLICE BOLLS AND INSPECT THE SEED FOR MATURITY. PARAQUAT SL HERBICIDE™ may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant® Def Defoliant® Dropp Defoliant® Ethephone Plant Growth Regulator® Folex Defoliant® Harvade Harvest Growth Regulator® Prep™ PGR May be applied as a split application. Do not exceed a total of 1.3 pts./A. To avoid leaf sticking, apply PARAQUAT SL HERBICIDE™ as a desiccant approximately 3-7 days after defoliant or a conditioning application and 7-14 days before harvest. Cooler temperatures may cause a longer waiting period between application of PARAQUAT SL HERBICIDE™ as a desiccant and defoliation/conditioner. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Always refer to tank mix product label(s) for rates, applications, directions for use, limitations and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Late season desiccation	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. May be applied as a split application. Do not exceed a total of 1.3 pts./A. Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB). Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking if a defoliation or conditioning application has been made. May be tank mixed with other harvest aid materials known to the local expert to be effective.
COTTON Desiccation of Regrowth	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use to desiccate regrowth occurring after defoliation or desiccation. Because regrowth is difficult to control thorough coverage with the full recommended rate is necessary. Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete. If regrowth is excessive, use higher rate.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
EASTER LILIES (Field grown)	Preemergence	1.7-2.7 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not exceed two applications per year.
FALLOW LAND Prior to planting of any crops	Preplant Broadcast to Fallow Land	1.0-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year, during the fallow period. Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes. Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges. For weeds approaching the maximum size of 6" the higher rate may be used. No more than 2 applications should be made during the fallow period. Prior to application allow maximum weed emergence to maximize the benefit of this use. Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.
GRASSES (For Seed) (For Use in Seedbed Preparation)	Preplant, At Planting, or Preemergence	1.3-2.7 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Prepare the seedbeds and allow weeds to germinate. Apply PARAQUAT SL HERBICIDE™ when weeds are at the 3-5 leaf stage. Applications may be repeated as necessary (but only up to 3 applications per year) prior to grass emergence. Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.
GUAR (Preharvest desiccation)	Preharvest	1.3 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply after the pods are fully mature. Do not graze treated areas or use the treated forage for animal feed.
GUAVA	Directed Spray	2.5 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Do not allow spray to contact green stems, fruit or foliage. Do not graze treated areas. Do not feed cover crops grown in treated areas to livestock. Retreatment or spot spraying may be necessary for mature woody weeds, late-germinating weeds and grasses, and perennials.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
HOPS (ID, OR, & WA only)	Directed Spray and/or Suckering and Stripping.	1.3 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Retreatment of spot treatment may be necessary. Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result. Do not allow animals to graze in treated hopyards. Silage and hop vine refuse may be fed to livestock. Spray only the basal 2 ft. of the vines for sucking and stripping. Repeat as necessary, but only up to 3 applications per season. <i>ed</i> Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using PARAQUAT SL HERBICIDE™ on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs. Chemical Pruning: Spray when vines are less than 3 ft. tall to burn back existing vines and obtain even emergence or subsequent vines. APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.
LENTILS NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.	Harvest Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume. May also be applied as a split application. DO NOT make more than 2 applications or exceed a total of 1.3 pts./A. The split application may improve coverage. Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color. DO NOT apply when weather conditions favor spray drift. To reduce spray drift a drift control agent may be included.
MINT (Peppermint, Spearmint)	Dormant Season	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For suppression of weeds such as, groundsel, chickweed, downy brome, bluegrass, Italian ryegrass, prickly lettuce. Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall. Do not apply more than 2.0 pts./A per dormant season. May be tank mixed with Sinbar® Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Always refer to the Sinbar® (terbacil) label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ONIONS (seeded) AND GARLIC	Preplant/ Preemergence	1.7-2.7 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> Do not make more than 1 application per year. For heavy weed infestations or wild oat control use the higher rate. Apply only one application per season at the 2.7 pts./A dosage. Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence. Apply a maximum of 2.7 pts./A per season.
PASSION FRUIT	Directed Spray	2.5 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 5 applications per year. If bark is still green at application time, use a shield or wrap vine. Pick all fruit off the ground prior to application if application is to be made during harvest season. Do not allow animals to graze on treated areas. It may be necessary to retreat or spot treat.
PEANUTS	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack. For at ground crack use, PARAQUAT SL HERBICIDE™ can be tank mixed with Pursuit® Herbicide or Dual MAGNUM® for residual weed control. Always refer to the Pursuit® or Dual MAGNUM® label for a list of weeds controlled, application rates, necessary precautions, and use limitations. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Do not apply by air.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PEANUTS Basagran® Herbicide Tank Mix	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Tank mix PARAQUAT SL HERBICIDE™ with Basagran® at 1 pt./A. for improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida. This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Always refer to the Basagran® label for weeds controlled rates of applications, directions for use, limitations, and restrictions. If peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment do not apply this tank mix as injury may be enhanced and/or prolonged. During prolonged periods of drought or unseasonably cold weather do not apply this tank mix as unsatisfactory weed control may result. Do not apply by air.
PEANUTS Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	Broadcast Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix PARAQUAT SL HERBICIDE™ with 8-16 oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200. Do not apply a total of more than 10.8 fl. oz. of product per season and make no more than 2 applications per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Always refer to the Butyrac® or Butoxone 200® labels for weeds controlled rates of applications, directions for use, limitations, and restrictions. Do not apply by air.
PIGEON PEAS (Puerto Rico only)	Directed Spray	1.3 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> Do not make more than 1 application per year. Avoid contact with pigeon pea foliage. Do not make more than 1 application per season. Do not graze treated areas or feed treated forage to livestock. Cannery waste can be fed to livestock.
PINEAPPLE	Directed Spray	1.3-2.7 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> Do not exceed 3 applications per season. More mature weeds may require retreatment.
POTATO	Preplant or Preemergence Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply up to ground cracking stage, before potatoes have emerged.
POTATO (California, Washington, Oregon, Idaho only; used alone)	Preplant Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
POTATO Fresh Market Only Preharvest vine killing and weed desiccation. For Use Only in the states of: Colorado, Delaware, Idaho, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Utah, Washington, Wisconsin and Wyoming	Broadcast	0.7-1.3 pts.	Ground: 20 gals.	3	For Fresh Market Potatoes Only. (Fresh Market Potatoes include potatoes that are sent directly from the field to a consumer, grocery store, or processor for use.) <ul style="list-style-type: none"> • Do not make more than 2 applications per year. • DO NOT use on potatoes that will be stored as tuber decomposition may result. • Potatoes must be harvested promptly after desiccation and processed or consumed immediately. • DO NOT apply to drought stressed potato vines. • DO NOT use to desiccate the vines of seed potatoes as seed pieces may fail to germinate and grow normally. • DO NOT pasture livestock in treated potato fields. • DO NOT exceed 2.6 pts./A per season. <i>ok</i> • Begin application when leaves begin to turn yellow. • Immature potato foliage is tolerant to PARAQUAT SL HERBICIDE™. However, desiccation will not be complete under this condition. • Use 1.3 pts./A rate where quick vine kill is desired. • For dense vine growth, use 2 applications of 0.6 pt/A. Split applications must be applied a minimum of five days apart.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
RICE	Preplant or Preemergence Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. <i>OK</i> Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. When vegetation is dense, use higher rates and spray volumes. Seeding should be done with a minimum amount of soil disturbance. PARAQUAT SL HERBICIDE™ will not control weeds and grasses emerging after application. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved or extended weed control. Always refer to the tank mix herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.
SAFFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during and after planting but before crop emergence.
SAFFLOWER (California only)	Preplant Broadcast	0.7 pt.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.
SMALL GRAINS (Barley, wheat)	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year.
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. <i>OK</i> Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. A tank mix with Hoelon® 3EC will improve grass control. Apply when weeds are actively growing and 1-6" in height. Weeds 6 inches or taller may not be controlled. Do not apply this tank mix to barley as crop injury may result. Always refer to the Hoelon® 3EC label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain)	Preplant/ Preemergence Broadcast or Band	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum weed and grass emergence seedbeds should be formed as far ahead of planting as possible Seeding should be done with a minimum amount of soil disturbance.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SORGHUM (Grain) Atrazine & 2,4-D ester [Low Volatile] Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.		48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may assist in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Always refer to the specific tank mix herbicide label(s) for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain) Harmony® Extra Herbicide Tank Mix	Preplant	1.3-2.5 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For improved weed control, PARAQUAT SL HERBICIDE™ may be tank mixed with Harmony Extra. Always refer to the Harmony Extra label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
SORGHUM (Grain)	Postemergence Directed (Including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when weeds are actively growing. Use higher rate on larger on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts sorghum plants. Do not exceed 2 postemergence-directed applications or exceed a total of 5.3 pts. PARAQUAT SL HERBICIDE™ per season. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height. Apply by directing spray between the rows and by using hooded or shielded sprayers to prevent spray contact with crop plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply when sorghum is at least 12" tall when naturally standing. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray. Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.

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SOYBEANS	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed a total of 4.0 pts. Of PARAQUAT SL HERBICIDE™ per season. Apply as a broadcast spray before, during or after planting, but before crop emergence. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control: <ul style="list-style-type: none"> 2,4-DB Lorox Canopy Lorox Plus Dual MAGNUM Prowl Goal Pursuit Herbicide Harmony Extra Scepter Herbicide (Preplant Only) Sencor Herbicide Lasso Surflan® Herbicide Lexone Turbo Herbicide Linex The rate of PARAQUAT SL HERBICIDE™ to be used in these tank mixtures is dependent on weed height and growing conditions. Where weed canopy is dense or under dry conditions use the highest recommended rate of PARAQUAT SL HERBICIDE™. Always refer to the respective product label(s) for a list of weeds controlled, rates of applications, directions for use, limitations, and restrictions. The lower application rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting. Seeding should be done with a minimum amount of soil disturbance. Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).
SOYBEANS 2,4-D ester (Low Volatile) Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting. Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting. Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not able to accept the results of soybean injury including possible loss of stand and yield. Do not use amine formulation as PARAQUAT SL HERBICIDE™ activity may be reduced. May be tank mixed with residual herbicides listed above. Always refer to the 2,4-D ester (Low Volatile) label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Postemergence Directed Spray (Includes Hooded or Shielded)	3.0-5.3 fl. oz.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply when weeds are actively growing. Use the lower rate of PARAQUAT SL HERBICIDE™ for control of seeding johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2" tall. For control of 2-4" red rice, <i>Brachiaria</i>, banyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 5.3 fl. oz of PARAQUAT SL HERBICIDE™. Use 5.3 fl. oz. of PARAQUAT SL HERBICIDE™ for control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed. Apply PARAQUAT SL HERBICIDE™ at 5.3 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-D formulation for control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice. Always refer to the 2,4-D label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not graze or harvest for forage or hay. If necessary, make a second and final application 7-14 days later. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. Use higher rate on larger (less than 6") on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray intentionally or accidentally including drift of fine droplets) contacts the plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Do not treat on soybeans that are less than 8" tall. Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Some crop injury will occur. The degree of injury is dependent upon the precision of application and spraying conditions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Harvest Aid	5.4-10.7 fl. oz.	Ground: 20 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Indeterminant varieties: Applications should be made when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, ½ of leaves have dropped, and remaining leaves are yellowing. Injury will occur on immature soybeans. Mature cocklebur, especially drought-stressed plants, are tolerant to PARAQUAT SL HERBICIDE™ and desiccation will not be complete. Always use the higher rate when treating cocklebur. Do not apply within 15 days of harvest. Do not graze or harvest for forage or hay.
STRAWBERRIES	Postemergence Directed Spray	1.3 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Direct spray between the rows, using shields to prevent spray contact with crop plants. Do not allow spray to contact strawberry plants as injury or excessive residues may result. Do not apply more than 3 times per season. Do not graze livestock in treated areas.
SUGAR BEETS	Preplant or Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For heavier weed infestations use the higher label rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. Can be used in fallow bed/stale seedbed for weed control. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SUGARCANE	Postemergence Directed Spray (includes Hooded or Shielded)			--	General Comments <ul style="list-style-type: none"> Do not make more than 2 applications per year, except applications made by air in Florida and Texas in which the maximum number of applications allowed is 1 per year. Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction. If necessary, a second and final application can be made when new weed growth is 2-6" high. Do not graze treated areas or feed treated forage to livestock.
--Florida--		1.3 pts.	Ground: 50 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Optimum results can be obtained by applying in early spring (March-April) when weeds are small. Do not apply after June 1, as cane growth may be stunted and yields reduced.
--Hawaii--		1.3 pts.	Ground: 20 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not apply after cane rows have closed in.
--Louisiana--		0.7-2.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For tiller control, apply when tillers are less than 18" high. For heavier weed infestations or tiller growth use the higher rate.
--Florida & Texas--	Harvest Aid <i>ok</i>	0.4-0.7 pts.	Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 1 application per year. Under cool, cloudy weather conditions use higher rate. Apply 3-14 days before burning and harvest.
SUNFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7-2.7 pts. <i>2.7</i>	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during, or after planting but before crop emergence.
SUNFLOWER	Preharvest Desiccation Broadcast	0.8-1.3 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this is equivalent to the time when the back of the heads are yellow and the bracts are turning brown. Do not graze treated areas or feed treated forage to livestock. When crop stands or weed infestations are heavy, use the higher label rate.
TARO, DRYLAND (Hawaii Only)	Postemergence Directed Spray	1.3-2.1 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not allow spray to contact the taro plants as injury may result. Make the first application when weed growth is 1-4" high. Weeds emerging after the application will not be controlled. A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.
TREE PLANTATION ESTABLISH-MENT Deciduous and Conifers	Preplant Broadcast	1.3-2.7 pts.	Ground: 20 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum emergence of weeds prepare ground early. Apply prior to planting. Plant with minimal soil disturbance. <i>ok</i> For heavier weed infestations, use the higher application rate. For improved burndown or residual control, tank mix PARAQUAT SL HERBICIDE™ with other herbicides labeled for this use. Always refer to the specific tank mix herbicide label(s) for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not apply in less than 20 gals/A as weed control will be reduced.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Orchards, Vineyards, Windbreak, Shade & Ornamental Trees: Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pistachios Plums Prunes Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arbutus, ash, elm, fir, oak, pine, etc.	Directed Spray	1.7- 2.7 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. Do not allow spray to make contact with green stems (except suckers), fruit or foliage. Use the shield or wrap plant when spraying around young trees or vines. Do not graze treated areas. Do not feed covered crops grown in treated areas to livestock. Do not apply when figs, nuts or olives to be harvested are on the ground. For apricots – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For cherries – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For figs – Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season. For grapes – treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage. For kiwi fruit – Do not treat more than 3 times per year. For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary. For nectarines – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For olives – Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season. For peaches – Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season. For pistachios – Do not exceed 2 applications after shells split. For plums – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.

Pecans?

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Tank Mixes	Directed Spray	1.7-2.7 pts.	Ground: 10 gals.	Always refer to other Tank Mix labels	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. PARAQUAT SL HERBICIDE™ may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: Devrinol® Herbicide Goal® Karmex® Krovar® Herbicides Princep® Sinbar® Solicam® Herbicide Surflan® Always refer to other herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions.
TYFON (New Hampshire only)	Preplant Preemergence	1.7-2.7 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seeding should be done with a minimum of soil disturbance. Weeds and grasses emerging after treatment will not be controlled. Crop plants emerged at time of application will be injured.
VEGETABLES (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Gherkin Gourd, Edible Groundcherry Lettuce Momordica spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	Preplant Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence. Banded or broadcast treatment applications can be made before, during or after planting but prior to the crop emergence. For heavier weed infestations, use the higher rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal®. Always refer to the Goal® label for weeds controlled, rates of applications, directions for use, limitations, and restrictions. Do not harvest tomatoes within 30 days after application.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
VEGETABLES Eggplant Tomatoes Peppers	Directed Spray	1.3 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control or suppression of emerged weeds between rows after crop establishment. Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure. Do not spray under conditions which may cause excessive drift. Apply when weeds are succulent and weed growth is less than 6". Do not apply more than 3 applications per season. Do not allow animals to graze in treated areas. Do not harvest tomatoes within 30 days after application.
VEGETABLES Tomatoes	After Final Harvest	1.6-2.5 pts.	Ground: 40-120 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply in 40-120 gallons of water per acre (0.62-0.93 lb. a.i./A). Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. Spray solution). To ensure maximum herbicide burndown tomato vines should be thoroughly covered. PARAQUAT SL HERBICIDE™ may be deactivated and less efficacious when dirty or muddy water is used. To aid in the removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently. DO NOT apply more than a total of 3 lbs. active ingredient (paraquat) per acre per season. To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For control of volunteer barley in preformed seedbeds. Do not harvest tomatoes within 30 days after application.
VEGETABLES Rhubarb	Dormant	1.7-2.7 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Do not exceed 2 applications per year. Apply during dormant season before buds in crown begin to grow.

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RESIN SOAKING

Pines including Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines.

Tree Selection – Trees should be selected from stands on sites not subject to stress from periods of extreme drought because the desiccating effect of PARAQUAT SL HERBICIDE™ is accentuated during drought, causing a reduction in the amount of oleoresin deposited in the xylem. Vigorous, non-stagnated natural or planted stands should be selected. Plan PARAQUAT SL HERBICIDE™ treatments in stagnated or commercial timber stands, not sooner than three years after a commercial thinning.

Application Directions – To bring the treatment into contact with sapwood (or xylem), apply water-diluted PARAQUAT SL HERBICIDE™ to an appropriate wound in the tree trunk.

Bark Streaks or Cuts: Use a standard or rotary bark hack or a chainsaw shipping tool (used in naval stores work) to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. Do not exceed 1/3 of the circumference of the tree. Serious girdling of the trunk and premature death of the tree can result if multiple streaks or cuts are made. Apply a coarse spray (about 1.7-5.0 ml) PARAQUAT SL HERBICIDE™ solution (1-5% cation, wt./wt. basis) to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak. For example, for a 9-inch diameter tree, using 3 ml of 2 or 4% PARAQUAT SL HERBICIDE™ solution will cover the 1-inch wide streak and will result in application of 60 or 120 mg per streak.

Time of Treatment: Less severe pine beetle infestations and longer tree life usually result during cool season treatments under non-drought seasons. However, resin soaking can occur from treatments made any time of the year.

Interval between Treatment and Tree Harvest: There should be at least a 6-month interval between application of PARAQUAT SL HERBICIDE™ and tree harvest. However it is preferable the interval is from 12-24 months, even though intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks possibly making early harvest necessary. With this treatment, there is a potential for promoting beetle attack or causing premature death of the tree. At high dosage rates, desiccation of the xylem tissue, rather than the desired resin soaking, may occur.

Note: This type of treatment may reduce stem growth during the period between treatment and tree harvest.

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Dilution Table for PARAQUAT SL HERBICIDE™ (3.0 lbs. cation per gallon)	
Concentration of Cation Desired (Wt./Wt. Basis)	Add the Following No. Gal. of Water to $\frac{2}{3}$ Gallon of PARAQUAT SL HERBICIDE™
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs)	Broadcast	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	---	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved emerged weed control or extended weed control. Always refer to the tank mix herbicide labels for weeds controlled, rates of applications, directions for use, limitations, and restrictions. <i>ok</i>
NONCROP USES	Broadcast or Spot Treatment	1.7- 2.7 pts.	Ground: 10 gals.	--	<ul style="list-style-type: none"> Repeat applications as necessary but do not make more than 10 applications per year. To be used in noncrop areas including public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, and fence lines. Avoid spray contact with the foliage of ornamentals or desired plants. <i>ok</i>

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
PARAQUAT SL HERBICIDE™

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendation	<ul style="list-style-type: none"> Do not make more than 3 applications per year. West of Cascade and Sierra Nevada Mountains <ul style="list-style-type: none"> Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth. Apply on moderately to heavily grazed areas for best seeding results. Do not use in heavy sod and weed growth areas. East of Rocky Mountains <ul style="list-style-type: none"> Use the 1.3 pts rate on vigorous or coarse sod species such as brome grass. Apply prior to, or at time of seeding grasses or forage legumes. Apply only to grazed or mowed pastures not more than 3" in height at time of treatment. Bermudagrass or Bahiagrass Sod <ul style="list-style-type: none"> Apply in late summer or early fall to sod not exceeding 3" in height. For control of emerged Little Barley, apply in February or March before the mid-boot stage of Little Barley. Bermudagrass and Coastal Bermudagrass Pastures <ul style="list-style-type: none"> Apply when bermudagrass is dormant. For control of little barley, apply before the mid-boot stage. Do not mow for hay until 40 days after treatment.
For Control of Endophyte-Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	Broadcast (Split Application)	0.7-1.3 pts. followed by 0.7-1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Use split applications of 10-21 days apart if necessary. Do not exceed 2.6 pts./A total in preparation for reseeding. For spring plantings, the initial application of 0.7-1.3 pts. may be made the previous fall. Apply when fescue is actively growing and no more than 4" high. To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
<p>*For Prickly Pear Desiccation in Pastures</p> <p>**Not for use in California</p>	Spot Sprays	0.8 fl. oz. per gallon of water	Spray to wet weed foliage	--	<ul style="list-style-type: none"> Do not make more than 10 applications per year. Hand-held equipment such as knapsacks, backpack sprayers, pump-up pressure sprayers, hand-guns, and handwands, can be used to direct the spray onto weed foliage so that the spray thoroughly wets foliage  Mix 0.8 fl. oz. of PARAQUAT SL HERBICIDE™ and 1/3 fl. oz. of a nonionic surfactant per gallon of water. Completely and uniformly cover all green prickly pear foliage with spray.  Apply in May through September for best desiccation results. Do not use more than 1.6 pts. of PARAQUAT SL HERBICIDE™ per acre per year. Apply only to pastures with no more than 3" of height at time of treatment. Tank mix with Grazon® P+D Specialty® herbicide at a rate of 1-2 fl. oz. per gallon of water for improved desiccation and perennial control of Prickly pear. Always refer to the Grazon® P+D Specialty herbicide label for weeds controlled, rates of applications, directions for use, limitations, and restrictions.

PARAQUAT SL HERBICIDE™

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
*For Juniper Species leaf moisture reduction or desiccation prior to <u>Prescribed</u> burning of pastures *Not for use in California	Broadcast	1.3 pts.	Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 10 applications per year. Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists. Apply during hot, dry weather conditions (generally July and August). Use 2% v/v nonionic surfactant in a minimum of 5 gal. spray solution. Monitor Juniper leaf moisture content. Maximum leaf moisture reduction generally occurs 3-4 weeks after PARAQUAT SL HERBICIDE™ application. Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns. Reduction in leaf moisture can be adversely affected by cool or humid weather conditions. Do not graze livestock after application or prior to burning.
*Native Pastures ** Not for use in California	Broadcast	1.0-1.25 pts.	Ground: 10 gals. Air: 5 gals.	--	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply PARAQUAT SL HERBICIDE™ for control of Downy and Japanese Brome. Apply in spring after 90% node formation of brome species, but before full bloom. Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season. Do not apply more than 1.25 pts. PARAQUAT SL HERBICIDE™ per year. Apply only to pastures with no more than 3" of height at time of treatment.

Conversion Table PARAQUAT SL HERBICIDE™ to Be Applied			
Ounces	Pints	Lb. a.i.	Acres/Gallon
2.5	0.16	0.06	51.3
4.8	0.30	0.11	26.7
5.28	0.33	0.12	24.2
5.52	0.35	0.13	23.2
10.00	0.63	0.23	12.8
11.00	0.69	0.26	11.6
11.20	0.70	0.26	11.4
12.00	0.75	0.28	10.7
16.00	1.00	0.38	8.0
20.00	1.25	0.47	6.4
20.80	1.30	0.49	6.2
24.00	1.50	0.56	5.3
28.00	1.75	0.66	4.6
32.00	2.00	0.75	4.0
40.00	2.50	0.94	3.2
43.20	2.70	1.00	3.0

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WARRANTY STATEMENT

SINON USA, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. ~~To the extent allowed by law, all such risks shall be assumed by Buyer and User. To the extent allowed by law, the exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product.~~ SINON USA, Inc. makes no warranties of merchantability or of fitness for a particular purpose or for any other expressed or implied warranty except as stated above.

AAtrex®, Ambush®, Bicep MAGNUM®, Bicep Lite II MAGNUM®, Caparol®, Cyclone®, Devrinol®, Dual MAGNUM®, E-Z Handler®, Karate®, Princep®, Reglone®, Solicam®, Surpass®, TopNotch®, Zorial® and the Syngenta logo are trademarks of a Syngenta Group Company

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Manufactured by: Sinon USA, Inc.
1080 Carol Lane, Suite 264
Lafayette, CA 94549

Page _____ is not included in this copy.

Pages 122 through 129 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☒ Attorney-Client work product.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.



Kathryn E. Szmuszkovicz
1350 I Street, N.W.,
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Washington, D.C. 20005-3311
Direct: 202-789-6037
Fax: 202-789-6190

January 10, 2006

Brenda Mallory, Esq.
Associate General Counsel for
Pesticides and Toxic Substances
Office of the General Counsel
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Re: Sinon Corporation and Sinon USA January 5, 2006 Response to Syngenta's
Petition to Revoke and Petition to Deny Sinon's Paraquat Registration and
Application

Dear Ms. Mallory:

Syngenta Crop Protection, Inc. (Syngenta) has received a letter and exhibits dated January 5, 2006 styled as the Response of Sinon Corporation and Sinon USA (collectively referred to as "Sinon" herein) to Syngenta's Petition to Cancel Sinon's Technical Paraquat Registration and to Syngenta's Petition to Deny Sinon USA's Application to Register a Paraquat End Use Product.¹ Syngenta writes to inform EPA that Syngenta is preparing a prompt, scientific and factual reply to the arguments and information offered by Sinon. As required by the Agency's reliance on petitions as a source of information pertinent to its registration decisions and by due process of law, Syngenta asks that no decision be made on Syngenta's pending petitions until EPA has considered the evidence and arguments that Syngenta will present in its reply.

As an initial matter, Sinon's response to Syngenta's petition to deny Sinon's application for an end-use product was filed over two months after the 60 day deadline set by EPA's regulations for a response to a petition. See 40 C.F.R. § 152.99(a)(b)(2) ("The applicant or registrant shall have 60 days from the date of his receipt of the petition to submit written

¹ Sinon erroneously refers to Syngenta's "Petition to Cancel." Syngenta has petitioned to revoke Sinon's paraquat technical registration because, among other reasons, the registration was mistakenly granted in the first instance and is void *ab initio*.

Brenda Mallory, Esq.
January 10, 2006
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comments to the Agency.”). Sinon offers no authority for ignoring this deadline, and, given Sinon’s delay in responding, Syngenta should be allowed a reasonable time to prepare its reply materials.

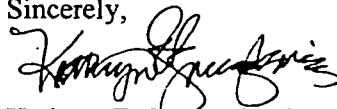
In particular, for the first time, Sinon has attempted to offer a defense of how its paraquat formulation will not present an incremental risk compared to Syngenta’s Inteon formulation. Syngenta strongly disagrees with Sinon’s assertions about the Inteon data and paraquat risk assessment. Syngenta will provide a scientific analysis of the toxicology and risk issues presented by Sinon’s applications that will provide the Agency with technical information pertinent to the decisions it must make.

Sinon has raised other new issues in its January 5 response, which totals 25 pages of briefing and exhibits. Sinon has mischaracterized the purposes and uses of Syngenta’s Material Safety Data Sheets for paraquat products and of Syngenta’s stenching agent for Inteon. Syngenta must be afforded an opportunity to be heard on these issues before EPA makes a decision on the petitions.

Finally, Sinon has continued to ignore the deficiencies in its data citations and the unsupported uses on its label, for both its technical and end use product, pointed out in Syngenta’s filings of September 30, 2005 (technical product) and December 12, 2005 (end use product). For these reasons alone EPA can not proceed to register Sinon’s paraquat end use product, and Syngenta must be allowed to respond to any arguments that Sinon presents to the Agency.

Syngenta asks that EPA Agency allow until February 1, 2006, for Syngenta’s reply to Sinon’s January 5, 2006 submission, followed by time for a surreply by Sinon if it so chooses, after which briefing can close. Thank you for your consideration of this matter.

Sincerely,



Kathryn E. Szuszkovicz
Counsel for Syngenta Crop Protection, Inc.

cc: A. Huskey
J. Jones
L. Rossi
J. Tompkins
T. Putsavage

CERTIFICATE OF SERVICE

I hereby certify that on this 10th day of January 2006, copies of the attached *Syngenta Crop Protection, Inc.'s Letter Regarding Sinon Corporation and Sinon USA's January 5, 2006 Response to Syngenta's Petition to Revoke and Petition to Deny Sinon's Paraquat Registration and Application* were delivered to the following by the method specified below:

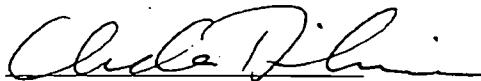
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January 5, 2006

Via Electronic and Overnight Delivery

Brenda Mallory, Esq.
Associate General Counsel for Pesticides and Toxic Substances
Office of the General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W., Code 2333A
Washington, DC 20460

RE: Response of Sinon Corporation to Syngenta Crop Protection, Inc.'s Petition to
Cancel the Registration of Sinon Corporation's Technical Pesticide Product
Containing the Active Ingredient Paraquat Dichloride

Response of Sinon USA to Syngenta Crop Protection, Inc.'s Petition to Deny
Sinon USA's Application to Register an End Use Pesticide Product Containing
the Active Ingredient Paraquat Dichloride

Dear Ms. Mallory:

This letter responds to the numerous filings made by Syngenta Crop Protection, Inc. ("Syngenta") with the U.S. Environmental Protection Agency ("EPA" or "Agency") seeking to cancel Sinon Corporation's technical pesticide registration containing the active ingredient paraquat dichloride¹ ("paraquat") and seeking to deny Sinon USA's application to register its, Paraquat Herbicide SL end use product also containing the active ingredient paraquat dichloride. As discussed below, Syngenta's Petitions fail to assert any valid grounds for revoking Sinon's technical paraquat registration or denying Sinon's end use paraquat application. Both of Syngenta's Petitions therefore must be denied.

¹ 1,1'-dimethyl-4,4'-bipyridinium dichloride, CAS No. 1910-42-5.

I. History of Sinon Corporation and Sinon USA's Applications to Register Paraquat Technical Concentrate and the End Use Product Paraquat SL and of Syngenta's Petitions Opposing Such Applications

Sinon Corporation presently holds a registration for Paraquat Technical Concentrate under EPA Reg. No. 70552-1, which was issued by EPA on May 19, 2005. EPA issued the registration following its determination that Sinon Corporation's product was substantially similar to Syngenta's paraquat product, "Paraquat Concentrate ES," EPA Reg. No. 100-1067.

Sinon Corporation's Paraquat Technical Concentrate registration has been the subject of various filings with EPA by Syngenta, beginning with a Petition to Deny filed on January 23, 2004;² to which Sinon Corporation responded on March 22, 2004.³ Multiple other communications from the parties to the Agency include letters from Syngenta dated May 10, 2004;⁴ from Sinon Corporation dated June 30, 2004;⁵ from Syngenta dated July 14, 2004;⁶ from Sinon Corporation dated August 23, 2004;⁷ from Sinon Corporation dated September 22, 2004;⁸ and from Syngenta dated October 5, 2004.⁹

By granting Sinon Corporation its Paraquat Technical registration, EPA impliedly denied Syngenta's Petition to Deny. This result was confirmed in EPA's August 9, 2005, letter to the parties, wherein, the EPA stated, "EPA's action granting Sinon's application constituted a denial of Syngenta's January 23, 2004 Petition to Deny." By granting Sinon Corporation its Paraquat Technical registration, EPA indicated that it had determined that Sinon had made a complete application for registration fully supported by data and for which a timely and proper offer to pay compensation to Syngenta for data supporting the registration was made.

² *Petition to Deny Sinon Corporation's Application to Register Paraquat Technical Concentrate*, dated January 23, 2004, from Kathryn Szmuszkovicz, Counsel for Syngenta, to Patricia Roberts, Associate General Counsel, EPA Office of General Counsel.

³ *Response in Opposition to Petition By Syngenta to Deny Sinon Corporation's Application to Register Paraquat Technical Concentrate*, dated March 22, 2004, from James Wright, Counsel for Sinon Corporation, to Gautum Srinivasan, Esq., EPA Office of General Counsel.

⁴ *Reply in Support of Syngenta's Petition to Deny Sinon's Application to Register Paraquat Technical Concentrate*, dated May 10, 2004, from Kathryn Szmuszkovicz, Counsel for Syngenta, to Gautum Srinivasan, EPA Office of General Counsel.

⁵ *Letter* dated June 30, 2004, from Cresence Stafford, Counsel for Sinon, to Gautum Srinivasan, Office of General Counsel, EPA.

⁶ *Letter* dated July 14, 2004, from Kathryn Szmuszkovicz, Counsel for Syngenta, to Gautum Srinivasan, EPA Office of General Counsel.

⁷ *Letter* dated August 23, 2004, from Cresence Stafford, Counsel for Sinon, to Gautum Srinivasan, EPA Office of General Counsel.

⁸ *Letter* dated September 22, 2004, from Cresence Stafford, Counsel for Sinon, to Patricia Roberts, Office of General Counsel.

⁹ *Letter* dated October 5, 2004, from Kathryn Szmuszkovicz, Counsel for Syngenta, to Gautum Srinivasan, EPA Office of General Counsel.

Syngenta subsequently filed a Petition to Revoke Sinon Corporation's technical paraquat registration on July 5, 2005.¹⁰ In response, Sinon and Syngenta submitted filings with EPA.¹¹

Most recently, Syngenta has challenged Sinon USA's application to register the end use product Paraquat Herbicide SL.¹² Syngenta filed a Petition to Deny on August 24, 2005,¹³ followed by additional filings on November 9, 2005¹⁴ and December 12, 2005.¹⁵ These additional filings were a cumulative reiteration of all of Syngenta's objections to both the technical paraquat registration and the end use registration.

This reply by Sinon responds to all of Syngenta's filings,¹⁶ and supplements Sinon's previous filings. Rather than reiterate all of the arguments made in Sinon's previous filings, we provide below only those additional comments we believe appropriate to clarify or better illuminate the issues in dispute.

II. Sinon's Registrations Do Not Present Any Significant Increase in the Risk of Unreasonable Adverse Effects On the Environment.

Syngenta's argument that Sinon's registrations pose an unacceptable level of risk is wholly unsupported. In its filings, Syngenta has relied upon the asserted increased safety of its new paraquat end use Gramoxone Inteon registration as the basis for this position. Syngenta has described the addition of an alginate substance to the formulation¹⁷, which Syngenta claims has reduced the acute oral canine toxicity of paraquat by slowing the systemic intake of the paraquat after oral ingestion. Syngenta claims that the Inteon paraquat

¹⁰ *Syngenta Crop Protection, Inc.'s Petition to Revoke Sinon Corporation's Registration of Paraquat Technical Concentrate*, July 5, 2005.

¹¹ Letter dated September 1, 2005 from Telisport Putsavage, Counsel for Sinon to Robert G. Perlis, Esq., EPA Office of General Counsel; Letter of September 30, 2005 from Kathryn Szmuszkovicz, Counsel for Syngenta, to Gautam Srinivasan, EPA Office of General Counsel.

¹² The original product name employed the word elixir which has since been changed.

¹³ *Petition to Deny Sinon USA's Application to Register an End Use Pesticide Product Containing the Active Ingredient Paraquat Dichloride Under the Proposed Name "Elixir," August 24, 2005.*

¹⁴ Letter of November 9, 2005 from Kathryn Szmuszkovicz, Counsel for Syngenta, to Angela Huskey, EPA Office of General Counsel.

¹⁵ Letter of December 12, 2005 from Kathryn Szmuszkovicz, Counsel for Syngenta, to Angela Huskey, EPA Office of General Counsel.

¹⁶ Syngenta has characterized its latest filing as "unopposed" and used other sarcastic characterizations, such as stating that Sinon has "spurned" the EPA petition process. As Syngenta's counsel is well aware, the petition process is not a pleading process, and there are no default decisions, as EPA decides petitions on their merits. Sinon has made crystal clear its oppositions to Syngenta's positions. The fact that Sinon may have found it unnecessary to respond to each and every one of Syngenta's numerous, redundant filings does not concede the validity of any of Syngenta's claims.

¹⁷ Syngenta's patent application for the alginate additive received a non-final rejection from the U.S. Patent and Trademark Office. See U.S. P.T.O. application data for application number 10/472,853, attached as Exhibit 1.

formulation has a lower acute oral human toxicity, and therefore will reduce the risk of fatal oral accidental and intentional ingestions.¹⁸

Syngenta has argued that FIFRA precludes the Agency from legally issuing Sinon its registrations because Syngenta's paraquat presents an asserted reduction in acute oral toxicity that Sinon's products do not achieve. Syngenta asserts that when compared with Syngenta's products, Sinon's products present a significant increase in the risk of unreasonable adverse effects on the environment.¹⁹

Syngenta's argument fails for the following reasons:

- Sinon's paraquat registrations fully comply with the safety standard for paraquat established by EPA in the Paraquat Dichloride Reregistration Eligibility Decision;
 - Any reduction in the risk of acute oral toxicity that Syngenta asserts is associated with its Inteon paraquat formulation is exaggerated and not significant;
 - Any potential incremental risk associated with Sinon's paraquat products does not rise to a level prohibited by FIFRA.
- A. Sinon's Paraquat Registrations Fully Comply With the FIFRA Safety Standard for Registering Paraquat as Established by the Paraquat Dichloride Reregistration Eligibility Decision**

EPA's Paraquat Reregistration Eligibility Decision ("RED")²⁰ establishes EPA's standards for the registration of paraquat products, and Sinon fully complied with the RED's standard when seeking to register its end-use product. The RED states that "...paraquat dichloride can be used without resulting in unreasonable adverse effects to humans and the environment if used according to the label as amended by this RED."²¹ The RED further states that "[t]he Agency has determined that paraquat dichloride products, labeled and used as specified in this Reregistration Eligibility Decision, will not pose unreasonable risks or adverse effects to humans or the environment."²² In summarizing the RED, EPA stated that "[t]he use of currently registered products containing paraquat dichloride in accordance with

¹⁸ Syngenta refers to having been "required" to place the maximum acute oral toxicity threshold on its technical paraquat label. Syngenta is "required" to place such a statement on its label because it *voluntarily* applied to have such a condition placed on its label.

¹⁹ Syngenta first raised the issue of relative product safety in its July 5, 2005 *Petition to Revoke Sinon Corporation's Registration of Paraquat Technical Concentrate*. Syngenta did not file its technical registration amendment application until almost 18 months after Sinon had filed its technical paraquat application.

²⁰ U.S. EPA 38-F-96-018, August, 1997.

²¹ Paraquat RED, p. 93.

²² *Id.*, p. 94.

approved labeling will not pose unreasonable risks or adverse effects to humans or the environment. Therefore, all uses of these products are eligible for re-registration."²³

Notwithstanding Syngenta's repetitive arguments, the fact that Syngenta has chosen to voluntarily reduce the acute oral canine toxicity of its paraquat products does not establish a new "registration standard" for paraquat products. If EPA were to determine that a new standard for the registration of paraquat products would be appropriate, it must follow established procedures for imposing such a standard, including following established procedures for revising the RED.

In this regard, it is ironic that Syngenta has cited *West Harlem Environmental Action v. EPA*, 2005 U.S. Dist. Lexis 15955 (S.D.N.Y. Aug. 7, 2005) to support its proposition that EPA should hold Sinon to a standard at variance with the standards established in the Paraquat RED. Rather than support Syngenta's proposition, that case, stands for the contrary proposition that EPA cannot vary standards established by a RED without following established procedures. Applied to Sinon's registrations, the case suggests that EPA cannot *ad hoc* vary the safety standards for paraquat short of following prescribed procedures, which EPA has not done here.

B. Syngenta Has Exaggerated the Significance of The Potential Reduction in the Acute Oral Human Toxicity of its Paraquat

Syngenta has presented at great length the asserted advances it has made in reducing the risk of acute oral human toxicity presented by its paraquat Inteon formulation. This argued reduction in human toxicity has not been established, but is premised upon the reduction in canine acute oral toxicity. While these advances are salutary, it appears that Syngenta has exaggerated the risk of acute oral human poisoning by paraquat in the U.S. and the significance of its asserted reduction in acute oral human toxicity, the extent of which is disputable.

Outside of the Petitions in this matter, Syngenta itself has touted the safety of the Gramoxone Max formulation which it now decries, stressing that poisoning from oral ingestion has been drastically minimized. For example, the following statement appears on the Syngenta-sponsored website Paraquat Information Center:²⁴

paraquat formulations were given three 'safening' agents to avoid accidental ingestion and to deter misuse: a blue dye, an alerting agent (a strong and deterring odor), and an emetic (to induce vomiting). The combination of these

²³ Paraquat RED Fact Sheet, p. 11.

²⁴ <http://www.paraquat.com/Home/tabid/132/Default.aspx>

measures has proven effective in addressing the problem of accidental ingestion and fatalities from such incidents are now extremely rare.²⁵

In addition, many external sources which Syngenta has cited with approval all indicate that the incidence of ingestion, intentional or accidental, has been drastically reduced in recent years. For example, the site quotes a World Health Organization report that states "[w]hile crop protection products are one of the methods used to commit suicide, they are not one of the most frequent and paraquat is not the most frequently used product."²⁶

Furthermore, available information suggests that the reduction in acute oral toxicity may be less than suggested by Syngenta's statements in support of its Petition. Since direct human studies are not available for this situation, and rodent studies would not reflect the functioning of the alginate, Syngenta has sought to demonstrate the reduced acute oral human toxicity of its paraquat Inteon product through testing performed on dogs.²⁷ However, too many variables exist between the canine and human digestive system, and in the resultant functioning of the alginate, to draw any conclusions as to a consistent reduced level of acute oral human toxicity. While the data developed do show a reduced oral canine LD₅₀ in comparison to the Gramoxone Max formula, the incremental reduction in acute oral human toxicity is not quantifiable based on that data.

The incremental safety improvement alleged for Gramoxone Inteon is also put into doubt. This question is also raised by a comparison of the Material Safety Data Sheets ("MSDS") for the original Gramoxone Max product and the modified Gramoxone Inteon product, attached as Exhibits 2 and 3 respectively. These documents show no difference in the warnings addressed to oral ingestion or in the estimated lethal dose of the products. Both MSDS's contain the statement "Paraquat has a history of use in suicides; although difficult to quantify, it is estimated that 15 ml of paraquat (approx. 37% paraquat dichloride) by oral ingestion is sufficient to cause death."²⁸ The use of identical statements for paraquat with and without the alginate undermines Syngenta's claims of improved safety.

The argued benefit in reduced oral human toxicity is also belied by Syngenta's recent action in revising the stenching agent. A stenching agent purposely infuses a chemical with a repugnant odor in order to alert anyone who might be about to accidentally ingest the product that it is not a foodstuff. Sinon's product would contain a strong stenching agent akin to that previously contained Syngenta's Gramoxone Max. However, despite its claims to greater

²⁵ See <http://www.paraquat.com/SafetyofParaquat/Safetyconcerns/tabid/248/Default.aspx>

²⁶ See *Suicide Prevention in Europe*, W.H.O., 2002, quoted at <http://www.paraquat.com/SafetyofParaquat/Safetyconcerns/tabid/248/Default.aspx>

²⁷ The following reports containing dog data were submitted to EPA: MRID 46364509, 46364510, 46364511, 46364517 and 46364518.

²⁸ Syngenta Crop Protection; Material Safety Data Safety Sheets for Gramoxone and Gramoxone Inteon.

safety with the Inteon product, Syngenta has actually placed a less repugnant stench agent in the Gramoxone Inteon formula. Syngenta states that:

Gramoxone Inteon is also distinguished by a new, less offensive alerting agent compared to Gramoxone Max. This new odor also has the benefit of creating a more positive user experience during application and handling.²⁹

It is difficult to understand how safety is improved by making the product odor less repugnant.

Thus while Sinon concedes that the acute oral canine toxicity of the Inteon formula is reduced, and holds the prospect of reducing acute oral human toxicity, the data do not support a quantifiable reduction in human acute oral risk. The registration of Sinon USA's paraquat end use product does not in comparison represent any quantifiable greater risk.

C. Any Potential Increase in Risk Presented by Sinon's Paraquat Products Does Not Rise to the Level Prohibited by FIFRA

Syngenta contends that the negligible difference in risk arguably presented by Sinon's paraquat violates the incremental risk provisions of FIFRA applicable to me-too registrations. That section of FIFRA provides that:

The Administrator may conditionally register or amend the registration of a pesticide if the Administrator determines that (i) the pesticide and proposed use are identical or substantially similar to any currently registered pesticide and use thereof, or differ only in ways that would not significantly increase the risk of unreasonable adverse effects on the environment, and (ii) approving the registration or amendment in the manner proposed by the applicant would not significantly increase the risk of any unreasonable adverse effect on the environment. An applicant seeking conditional registration or amended registration under this subparagraph shall submit such data as would be required to obtain registration of a similar pesticide under paragraph (c)(5) of this section. FIFRA §3(c)(7)(A)

This provision was enacted to remove the two-tiered standard for registration inadvertently created by the 1972 amendments to FIFRA.³⁰ The 1972 amendments established a new, stricter standard of review for all pesticides proposed to be registered after its enactment. This standard applied to any application for registration, regardless of whether

²⁹ See Syngenta Media Highlights, "Gramoxone Inteon Herbicide Registered for Use by EPA" (November 3, 2005), available at http://www.syngenta-us.com/media/article.asp?article_id=617.

³⁰ See P.L. 92-516.

similar pesticides containing the same ingredients for the same uses were already registered. The Agency was expected to promptly conduct a review of all registered active ingredients, thereby placing all registrants, old and new, on the same review basis. However, the anticipated ingredient review process consumed far more time than was anticipated,³¹ during which no new me-too registrations could be granted unless the review of the ingredient was completed. As a result, this system quickly became an insurmountable barrier that was paralyzing generic registrations.

Congress responded by amending FIFRA in 1978³² to create conditional registration specified in the section cited above. This amendment allowed EPA to continue to register generic products for already registered ingredients and uses, without having to first conduct a comprehensive review of the active ingredient in question. Conditional registrations were premised on the concept that so long as an additional registration of a product already registered presented no risks different than those of products already registered, no greater risk of environmental harm would be presented beyond that already presented by the registered product(s). Freed of conducting its comprehensive reviews in the arbitrary sequence of applications filed, EPA could take a far more environmentally-beneficial approach of conducting its organized review of active ingredients on a risk-based priority.

In authorizing conditional registrations, Congress did not establish an absolute standard requiring generic products to be precisely identical to existing registered products, but rather established an avenue for examining the potential for significant increased risks from substantially similar products. For example, many me-too products have variations in one or more avenues of acute toxicity, including those that result in differing acute toxicity categories for products that nonetheless are registered as substantially similar, me-too products.

EPA's use of a conditional registration in this instance arguably is inconsistent with the conditional registration provision of FIFRA and the intent of Congress in establishing conditional registrations. As described above, the conditional registration was implemented to allow for the immediate registration of me-too products containing active ingredients that had not undergone full review while insuring that if, and when additional data was required for an ingredient, all registrants of that ingredient, including later registrants, would be required to submit such data.

In fact, EPA has fallen into the practice of utilizing conditional registrations to impose minor corrections upon an applicant while avoiding the need to require an applicant to amend a pending application before it can be granted. Typical of these corrections are minor label text revisions that EPA orders an applicant to make as a condition of granting the registration.

³¹ This system was the precursor of the present reregistration process. That process resulted in a Registration Standard, a counterpart to today's RED.

³² P.L. 95-396.

In theory such changes should be made first before issuing a registration, but the practice of issuing registrations conditioned on minor corrections is advantageous to both EPA and applicants because it reduces the number of document filings necessary to secure a registration and thus reduces the amount of time consumed before a registration is issued. These conditions typically are not directed at mitigating any increased risk of adverse effects or at the obligation to subsequently develop data, which was the purpose of Congress.

In the case of Sinon's paraquat technical registration, no such data condition was imposed. The only conditions imposed upon Sinon's paraquat concerned product specific storage stability data and two minor label revisions to the final printed label. These conditions have nothing to do with any significant risk of increased adverse effects, nor with complying with any subsequent data development requirements. In fact, since the RED has already been completed and complied with, no potential exists for any data development requirement until such time as EPA completes registration review or some similar comprehensive review of the active ingredient paraquat.

Even if one concedes for the sake of argument that the Sinon registration was properly issued as a conditional registration for the sake of argument, the alleged resulting difference in acute oral toxicity does not rise to the level of unacceptable as contemplated by the conditional registration provisions of FIFRA and its implementing rules. Syngenta has stated that since 1998 there were fifteen (15) lethal oral ingestions of paraquat, 5 of which, or 33%, were intentional suicides. Thus, in recent years there has been an approximate average of 1.4 accidental lethal ingestions per year. If, for example, one were to assume that Sinon achieved 25% of the U.S. paraquat market, the difference in risk presented by the Sinon product would be approximately 0.35 fatal ingestions per year. Given that Sinon is not likely to achieve that level of market penetration, the risk arguably presented by Sinon's paraquat would be even smaller. Compared with the numbers of uses and users in the U.S., this arguable reduction in the risk of 0.35 or fewer lethal intentional oral ingestions per year does not constitute a significant increase in the risk of adverse effects.

In addition, all paraquat products, including Sinon's, are restricted use pesticides. Thus the distribution and sale of these products, and consequently their availability to the general public, is tightly regulated and significantly limited in comparison to any general use pesticide. This strictly controlled availability of paraquat products in comparison to other similarly toxic substances greatly reduces the comparative risk of ingestion of a paraquat product, either accidentally or intentionally.

III. Sinon Has Fully Complied with FIFRA's Requirements for Offers to Pay Data Compensation.

Syngenta incorrectly asserts that Sinon is required under FIFRA³³ and its implementing regulations to provide an offer to pay to Syngenta prior to or at the same time Sinon submitted its application to EPA. In support of its position, Syngenta cites portions of a variety of rules that assertedly required the submission of an offer to pay prior to the submission of the registration application. This position however has not been adopted by EPA and is simply at odds with EPA's interpretation of the statute and its rules, as evidenced by the fact that EPA granted Sinon Corporation its paraquat technical registration in the face of this same argument.

Syngenta's position directly contravenes the text of the Agency's most pertinent rule, which Syngenta failed to cite. The final rule implementing FIFRA's data compensation procedures states:

All information required by this subpart should be submitted with the application, but may be submitted *at any time prior to EPA's approval of the application*. The Agency will not approve any application until it determines either that the application is not subject to these requirements or that all required materials have been submitted and are acceptable (*emphasis added*).

40 C.F.R. § 152.84, promulgated August 1, 1984. See *Procedures to Ensure Protection of Data Submitters' Rights*, 40 C.F.R. § 152.80 *et seq.*, 49 Fed. Reg. 30884 (August 1, 1984). For Syngenta to argue that "at any later time prior to EPA's approval of the application" means at the time the application is filed directly contradicts the express text of 40 C.F.R. § 152.84 and is not tenable.

As required by the rules, Sinon Corporation and Sinon USA submitted to Syngenta Notifications of Intent to Apply for Registration before filing their technical and end use product applications. Prior to the granting of the each registration, each company then tendered to Syngenta an Offer to Pay Compensation and submitted to the EPA a Certification With Respect to the Citation of Data and copies of the Offers to Pay. Sinon Corporation and Sinon USA have fully complied with the requirements of FIFRA in respect to offers for compensation for the data it cited in support of their respective applications.

IV. Conclusion

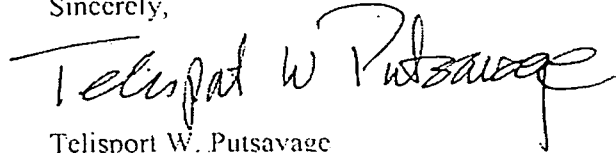
Both Sinon paraquat products fully comply with the standards established by the Agency for the registration of paraquat. Unless and until the Agency revises those standards through appropriate regulatory steps of general application, there is no basis for denying

³³ FIFRA § 3(c)(1)(F).

Response of Sinon Corporation and Sinon USA to Syngenta Crop Protection's Petitions to
Cancel or Deny the Sinon Paraquat Technical Registration and Paraquat End Use Application
January 5, 2006
Page 11 of 11

Sinon's application. Sinon has cited all data necessary to support its paraquat registrations, and has fully complied with all steps necessary to protect Syngenta's rights as a data submitter. Syngenta's Petitions should be denied in all respects, and Sinon USA's registration for Paraquat SL should be issued forthwith.

Sincerely,



Telisport W. Putsavage
Cresence Stafford
Attorneys for Sinon Corporation and
Sinon USA Inc.

cc: Angela M.D. Huskey, Esq., EPA Office of General Counsel
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Ms. Hope Johnson, Registration Division, EPA Office of Pesticide Programs
Kathryn Szmuszkóvicz, Esq., Beveridge & Diamond, Counsel for
Syngenta Prop Protection

Printer Friendly

10/472,853 Composition containing paraquat and/or diquat an alginate and emetic
and/or purgative

Application Data

Application Number:	10/472,853	Customer Number:	-
Filing or 371 (c) Date:	04-01-2004	Status:	Non Final Action Mailed
Application Type:	Utility	Status Date:	09-30-2005
Examiner Name:	CLARDY, S	Location:	ELECTRONIC
Group Art Unit:	1617	Location Date:	-
Confirmation Number:	9288	Earliest Publication No:	US 2004-0157742 A1
Attorney Docket Number:	PPD 50616	Earliest Publication Date:	08-12-2004
Class / Subclass:	504/235	Patent Number:	-
First Named Inventor:	Emma Ashford , Kent. (GB)	Issue Date of Patent:	-
Title of Invention:	Composition containing paraquat and/or diquat an alginate and emetic and/or purgative		

[Close Window](#)

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Printer Friendly

10/472,853

Composition containing paraquat and/or diquat an alginate and emetic
and/or purgative

Transaction History

Date	Contents Description
09-30-2005	Mail Non-Final Rejection
09-28-2005	Non-Final Rejection
05-18-2005	Case Docketed to Examiner in GAU
02-10-2005	Miscellaneous Incoming Letter
06-22-2004	IFW TSS Processing by Tech Center Complete
06-22-2004	Case Docketed to Examiner in GAU
09-24-2003	Preliminary Amendment
05-03-2004	Cleared by OIPE CSR
04-01-2004	371 Completion Date
04-22-2004	Application Dispatched from OIPE
04-22-2004	Notice of DO/EO Acceptance Mailed
04-01-2004	A statement by one or more inventors satisfying the requirement under 35 USC 115, Oath of the Applic
02-09-2004	Notice of DO/EO Missing Requirements Mailed
09-24-2003	Initial Exam Team nn

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MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **GRAMOXONE MAX**
EPA Signal Word: **Danger-Poison**
Active Ingredient(%): **Paraquat Dichloride (43.8%)**
Chemical Name: **(1,1'-dimethyl-4,4'-bipyridinium dichloride)**
Chemical Class: **Herbicide**
EPA Registration Number(s): **100-1074**

Product No.: **A12837B**

CAS No.: **1910-42-5**

Section(s) Revised: **16**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Paraquat Emetic	Not Established	Not Established	0.02 mg/m ³ TWA***	No
Paraquat Dichloride (43.8%)	0.5 mg/m ³ TWA (respirable; skin; as paraquat)	Not Established	0.08 mg/m ³ TWA (respirable); 0.5 mg/m ³ TWA (total)***	No

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: **E, S**

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Irritant (skin with prolonged contact), irritant (eye, respiratory passages), inhalation (TLV), toxic (oral). May be fatal if swallowed. Harmful if absorbed through skin. Causes substantial but temporary eye injury.

Hazardous Decomposition Products

Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride; possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

Physical Properties

Appearance: **Dark green liquid**
Odor: **Strong; pungent; obnoxious**

Unusual Fire, Explosion and Reactivity Hazards

Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: **SPEED IS ESSENTIAL.** Immediate medical attention is required. Immediate medical attention is required.

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If available, give an adsorbent such as activated charcoal, bentonite or Fuller's Earth.
Call a poison control center or doctor immediately for treatment advice.
Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air.
The odor of this product is from the stenching agent, which has been added, not from the paraquat.
If person is not breathing, call 911 or an ambulance.
Call a poison control center or doctor for further treatment advice.

Notes to Physician

Refer to the booklet 'Paraquat Poisoning. A Practical guide to Diagnosis, First Aid and Hospital Treatment'. (<http://www.syngenta.com/pqmedguide/>) Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): > 210°F
Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable
Autoignition Temperature: > 1157 °F
Flammability: Not Flammable

Unusual Fire, Explosion and Reactivity Hazards

Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Untreated spilled material can dry to a highly irritating dust.

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store above 32°F (0°C).

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion:** Store the material in a well-ventilated area out of the reach of children and domestic animals. Do not store food, beverages, or tobacco products in the storage area. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.
- Eye Contact:** To avoid eye contact, wear safety glasses with side shields or chemical goggles.
- Skin Contact:** This product is FIFRA regulated. Refer to product labeling for end-user Personal Protection requirements. When handling or when exposure to concentrate is possible, wear: long-sleeved shirt and long pants, waterproof gloves, shoes and socks, face shield and chemical-resistant apron. Remove any contaminated clothing promptly. Syngenta conducted ASTM permeation tests using PVC gloves (0.2mm thickness) and showed no breakthrough of the product after eight hours of testing.
- Inhalation:** A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Dark green liquid
- Odor:** Strong; pungent; obnoxious
- Melting Point:** Not Applicable
- Boiling Point:** Approx 212°F (aqueous solution)
- Specific Gravity/Density:** 1.13 g/ml
- pH:** 5 (5% solution)

Solubility in H₂O

Paraquat Dichloride: 620 g/l @ 68°F (20°C)

Vapor Pressure

Paraquat Dichloride: 7.5 x 10⁻⁸ mmHg @ 77°F (25°C)

10. STABILITY AND REACTIVITY

- Stability:** Stable under normal use and storage conditions.
- Hazardous Polymerization:** Will not occur.
- Conditions to Avoid:** Store above 32°F (0°C).
Stable in acidic and neutral solution. Decomposed by alkali and in the presence of U.V. light. Compound inactivated by adsorption onto inert clay.
- Materials to Avoid:** Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.
- Hazardous Decomposition Products:** Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride; possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion:** Slightly Toxic

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Oral (LD50 Female Rat) : = 283 mg/kg body weight
Dermal: Slightly Toxic
Dermal (LD50 Rat) : > 2,000 mg/kg body weight
Inhalation: Highly Toxic
Inhalation (LC50 Rat) : 0.0006 mg/l air - 4 hours
Eye Contact: Moderately Irritating (Rabbit)
Skin Contact: Slightly Irritating (Rabbit)
Skin Sensitization: Not a skin sensitizer in animal tests.

Reproductive/Developmental Effects

Paraquat Dichloride: A 3-generation reproduction study showed no evidence of fertility or reproductive effects at doses below that causing maternal toxicity. Reproductive NOEL was above 7.5 mg/kg/day, the highest dose level.

Chronic/Subchronic Toxicity Studies

Paraquat Dichloride: Rodent studies showed signs of irritation in 21-day dermal studies. In a 2.5 year chronic study, rats showed evidence of cataracts, body weight reduction and lung effects (alveolar macrophage infiltration) at 75 ppm and above. A 90-day dog diet study showed evidence of lung effects leading to alveolar collapse and death at 3 mg/kg/day. Chronic pneumonitis was seen in a 1-year dog study at 0.93 mg/kg/day and above.

Carcinogenicity

Paraquat Dichloride: No evidence in the rat or mouse.

Other Toxicity Information

Occupational exposure to paraquat does not pose any health issues as long as normal hygiene precautions are followed. Paraquat has a history of use in suicides; although difficult to quantify, it is estimated that 15 ml of paraquat (approx 37% paraquat dichloride) by oral ingestion is sufficient to cause death. Two types of deaths can be identified: acute fulminate poisoning leading to multi-organ failure in a few days, and a more protracted form resulting in kidney failure and pulmonary fibrosis. Treatment is available and successful, providing the quantity of product ingested is low and the time to treatment is short.

Toxicity of Other Components

Paraquat Emetic

Toxic if swallowed. Slightly irritating to skin and eyes. Inhalation of dust may cause nausea and vomiting.

Target Organs

Active Ingredients

Paraquat Dichloride: Lung, kidney

Inert Ingredients

Paraquat Emetic: Skin, eye, respiratory system

12. ECOLOGICAL INFORMATION

Summary of Effects

Paraquat Dichloride:

Practically non-toxic to bees. Slightly toxic to fish and birds. Moderately toxic to invertebrates.

Eco-Acute Toxicity

Paraquat Dichloride: Bees LC50/EC50 48 ug/bee
Invertebrates (Water Flea) LC50/EC50 4.0 ppm
Fish (Trout) LC50/EC50 55 ppm
Fish (Bluegill) LC50/EC50 13 ppm
Birds (8-day dietary - Bobwhite Quail) LC50/EC50 981 ppm
Birds (8-day dietary - Mallard Duck) LC50/EC50 4,048 ppm

Eco-Chronic Toxicity

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Paraquat Dichloride: Not Available

Environmental Fate

Paraquat Dichloride:

The information presented here is for the active ingredient, paraquat dichloride.

Low bioaccumulation potential. Persistent in soil. Not persistent in water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Corrosive D002

Listed Waste: Not listed

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Paraquat)

Hazard Class or Division: 8 (6.1)

Identification Number: UN 2922

Packing Group: PG III

B/L Freight Classification

Herbicides, NOI (NMC Class 60)

Comments

Water Transport - International

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Paraquat)

Hazard Class or Division: 8 (6.1)

Identification Number: UN 2922

Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Paraquat Dichloride (43.8%) (CAS No. 1910-42-5)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills \geq 2.4 gal. (based on paraquat dichloride [RQ = 10 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)

Corrosive D002

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

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NFPA Hazard Ratings

Health: 4
Flammability: 0
Instability: 0

HMIS Hazard Ratings

Health: 3
Flammability: 0
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 01/22/1999

Revision Date: 08/17/2005

Replaces: 01/28/2005

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

RSVP# : SCP-955-00275H

End of MSDS

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MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **GRAMOXONE INTEON**
EPA Signal Word: **Danger-Poison**
Active Ingredient(%): **Paraquat Dichloride (30.1%)**
Chemical Name: **(1,1'-dimethyl-4,4'-bipyridinium dichloride)**
Chemical Class: **Herbicide**
EPA Registration Number(s): **100-1217**

Product No.: **A7813K**
CAS No.: **1910-42-5**
Section(s) Revised: **1**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/ARC/OSHA Carcinogen
Paraquat Emetic (0.088%)	Not Established	Not Established	0.02 mg/m ³ TWA***	No
Paraquat Dichloride (30.1%)	0.5 mg/m ³ TWA (respirable; skin; as paraquat)	Not Established	0.08 mg/m ³ TWA (respirable); 0.5 mg/m ³ TWA (total)***	No

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: E, S

3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Irritant (skin with prolonged contact), irritant (eye, respiratory passages), inhalation (TLV), toxic (oral). May be fatal if swallowed. Harmful if absorbed through skin. Causes substantial but temporary eye injury.

Hazardous Decomposition Products

Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride, possible trace amounts of phosgene, nitrogen oxides, ammonia, and other toxic and noxious fumes.

Physical Properties

Appearance: **Bluish green to dark green liquid**
Odor: **Characteristic; strong**

Unusual Fire, Explosion and Reactivity Hazards

Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: **SPEED IS ESSENTIAL.** Immediate medical attention is required. If available, give an adsorbent such as

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activated charcoal, bentonite or Fuller's Earth.

Call a poison control center or doctor immediately for treatment advice.

Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air.

The odor of this product is from the stenching agent, which has been added, not from the paraquat.

If person is not breathing, call 911 or an ambulance.

Call a poison control center or doctor for further treatment advice.

Notes to Physician

Refer to the booklet 'Paraquat Poisoning. A Practical guide to Diagnosis, First Aid and Hospital Treatment'.

(<http://www.syngenta.com/pqmedguide/>) Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15 ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): Not Available

Flammable Limits (% in Air): Lower: % Not Applicable Upper: % Not Applicable

Autoignition Temperature: Not Available

Flammability: Does not flash

Unusual Fire, Explosion and Reactivity Hazards

Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Untreated spilled material can dry to a highly irritating dust.

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store above 32°F (0°C).

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Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion: Store the material in a well-ventilated area out of the reach of children and domestic animals. Do not store food, beverages, or tobacco products in the storage area. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.
- Eye Contact: To avoid eye contact, wear safety glasses with side shields or chemical goggles.
- Skin Contact: This product is FIFRA regulated. Refer to product labeling for end-user Personal Protection requirements. When handling or when exposure to concentrate is possible, wear: long-sleeved shirt and long pants, waterproof gloves, shoes and socks, face shield and chemical-resistant apron. Remove any contaminated clothing promptly. Syngenta conducted ASTM permeation tests using PVC gloves (0.2mm thickness) and showed no breakthrough of the product after eight hours of testing.
- Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Bluish green to dark green liquid
- Odor: Characteristic; strong
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.12 g/cm³ @ 68°F (20°C)
- pH: 4 - 8 (10 g/l in deionized water)

Solubility in H₂O

- Paraquat Dichloride: 620 g/l @ 68°F (20°C)

Vapor Pressure

- Paraquat Dichloride: 7.5 x 10⁻⁸ mmHg @ 77°F (25°C)

10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: Store above 32°F (0°C).
Stable in acidic and neutral solution. Decomposed by alkali and in the presence of U.V. light. Compound inactivated by adsorption onto inert clay.
- Materials to Avoid: Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.
- Hazardous Decomposition Products: Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride, possible trace amounts of phosgene, nitrogen oxides, ammonia, and other toxic and noxious fumes.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Moderately Toxic

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	Oral (LD50 Rat) :	310 mg/kg body weight
Dermal:	<u>Slightly Toxic</u>	
	Dermal (LD50 Rat) :	> 2,000 mg/kg body weight
Inhalation:	<u>Highly Toxic</u>	
	Inhalation (LC50 Rat) :	0.0006 mg/l air - 4 hours (data based on a similar formulation)
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Moderately Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Paraquat Dichloride: A 3-generation reproduction study showed no evidence of fertility or reproductive effects at doses below that causing maternal toxicity. Reproductive NOEL was above 7.5 mg/kg/day, the highest dose level.

Chronic/Subchronic Toxicity Studies

Paraquat Dichloride: Rodent studies showed signs of irritation in 21-day dermal studies. In a 2.5 year chronic study, rats showed evidence of cataracts, body weight reduction and lung effects (alveolar macrophage infiltration) at 75 ppm and above. A 90-day dog diet study showed evidence of lung effects leading to alveolar collapse and death at 3 mg/kg/day. Chronic pneumonitis was seen in a 1-year dog study at 0.93 mg/kg/day and above.

Carcinogenicity

Paraquat Dichloride: No evidence in the rat or mouse.

Other Toxicity Information

Occupational exposure to paraquat does not pose any health issues as long as normal hygiene precautions are followed. Paraquat has a history of use in suicides; although difficult to quantify, it is estimated that 15 ml of paraquat (approx 37% paraquat dichloride) by oral ingestion is sufficient to cause death. Two types of deaths can be identified: acute fulminate poisoning leading to multi-organ failure in a few days, and a more protracted form resulting in kidney failure and pulmonary fibrosis. Treatment is available and successful, providing the quantity of product ingested is low and the time to treatment is short.

Toxicity of Other Components

Paraquat Emetic (0.088%)

Toxic if swallowed. Slightly irritating to skin and eyes. Inhalation of dust may cause nausea and vomiting.

Target Organs

Active Ingredients

Paraquat Dichloride: Lung, kidney

Inert Ingredients

Paraquat Emetic: Skin, eye, respiratory system

12. ECOLOGICAL INFORMATION

Summary of Effects

Paraquat Dichloride:

Practically non-toxic to bees. Slightly toxic to fish and birds. Moderately toxic to invertebrates.

Eco-Acute Toxicity

Paraquat Dichloride: Bees LC50/EC50 48 ug/bee

Invertebrates (Water Flea) LC50/EC50 4.0 ppm

Fish (Trout) LC50/EC50 55 ppm

Fish (Bluegill) LC50/EC50 13 ppm

Birds (8-day dietary - Bobwhite Quail) LC50/EC50 981 ppm

Birds (8-day dietary - Mallard Duck) LC50/EC50 4,048 ppm

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Eco-Chronic Toxicity

Paraquat Dichloride: Not Available

Environmental Fate

Paraquat Dichloride:

The information presented here is for the active ingredient, paraquat dichloride.

Low bioaccumulation potential. Persistent in soil. Not persistent in water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Corrosive D002

Listed Waste: Not listed

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Paraquat)

Hazard Class or Division: Class 8, (6.1)

Identification Number: UN 2922

Packing Group: PG III

B/L Freight Classification

Herbicides, NOIBN

Comments

Water Transport - International

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Paraquat)

Hazard Class or Division: Class 8, (6.1)

Identification Number: UN 2922

Packing Group: PG III

Air Transport - International

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Paraquat)

Hazard Class or Division: Class 8, (6.1)

Identification Number: UN 2922

Packing Group: PG III

Packing Instructions: Passenger - 818, Cargo 820

Packaging Limitations: Inner packages over 5 liters, and single packages over 60 liters cannot be shipped by Cargo Aircraft. Inner packages over 2.5 liters, and single packages over 5 liters cannot be shipped by Passenger Aircraft.

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Paraquat Dichloride (30.1%) (CAS No. 1910-42-5)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills > 5 gal. (based on paraquat dichloride [RQ = 10 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)

Corrosive D002

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TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 4
Flammability: 0
Instability: 0

HMIS Hazard Ratings

Health: 3
Flammability: 0
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 02/18/2005

Revision Date: 09/07/2005

Replaces: 08/17/2005

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

RSVP# : Not Applicable

End of MSDS


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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing combined *Response of Sinon Corporation to Syngenta Crop Protection, Inc.'s Petition to Cancel the Registration of Sinon Corporation's Technical Pesticide Product Containing the Active Ingredient Paraquat Dichloride and Response of Sinon USA to Syngenta Crop Protection, Inc.'s Petition to Deny Sinon USA's Application to Register an End Use Pesticide Product Containing the Active Ingredient Paraquat Dichloride* was served upon the following by placement in a prepaid overnight delivery envelope and deposited for delivery:

Brenda Mallory, Esq.
Pesticides and Toxic Substances Law Office
Office of the General Counsel
U.S. Environmental Protection Agency
Ariel Rios Building, Mail Code 2333A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Kathryn E. Szmuszkovicz
Counsel for Syngenta Corporation
Beveridge & Diamond, P.C.
1350 I Street, N.W., Suite 700
Washington, D.C. 20005-3311


Dawn Bocanegra

January 5, 2006



Robert Butz
<butz@chemreg.com>
12/23/2005 04:42 PM

To Hope Johnson/DC/USEPA/US@EPA, Jim
Tompkins/DC/USEPA/US@EPA
cc Angela Huskey/DC/USEPA/US@EPA, Telisport Putsavage
<putsavage@chemlaw.com>
bcc
Subject Agreement to Renegotiate PRIA Deadline

Jim and Hope,

As we discussed this morning, this will confirm our agreement to renegotiate the PRIA deadline for PRIA decision number D-359653 for two weeks, to January 18, 2006.

We understand you will attempt to conduct all necessary internal review meetings as soon as possible, since time is critical to our client.

Please call or email me if you have any questions or need any further information.

Robert G. Butz, Ph.D.,
Authorized Agent for Sinon USA.
ChemReg International
1990 Old Bridge Road, Suite 201
Lake Ridge, VA 22192

Phone: 703-492-0541
Fax: 703-492-0668
Email: butz@chemreg.com

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Hope
Johnson/DC/USEPA/US
12/22/2005 02:22 PM

To butz@chemreg.com
cc
bcc
Subject PRIA Extension of 82557-R

Mr. Butz,

I will be leaving the office soon, so please contact Jim Tompkins with any further questions/comments (703-305-5697). Also, if Sinon USA Inc agrees to the 6 week time extension till February 17, 2006, please email both Jim Tompkins and myself a statement stating such. I will be out of the office until January 3rd.

Thank you, and Happy Holidays,

Hope A. Johnson
U.S. Environmental Protection Agency
Office of Pesticide Programs
Registration Division
Herbicide Branch
Phone: 703-305-5410
Fax: 703-308-1825
7505C

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Page _____ is not included in this copy.

Pages 161 through 162 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☒ Attorney-Client work product.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.



4.)
Kathryn E. Szmuszkovicz
1350 I Street, N.W.
Suite 700
Washington, D.C. 20005-3311
Direct: (202) 789-6037
Fax: (202) 789-6190
kszmuszkovicz@bdlaw.com

December 12, 2005

Angela M.D. Huskey, Esq.
Office of the General Counsel
Pesticides and Toxic Substances Law Office
U.S. Environmental Protection Agency
Ariel Rios Building, Mail Code 2333A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: Syngenta's Petition to Deny Sinon USA Inc.'s Application to Register an End-Use Pesticide Product Containing the Active Ingredient Paraquat Dichloride

Dear Ms. Huskey:

Syngenta Crop Protection Inc. (Syngenta) writes to alert EPA to new deficiencies in the application of Sinon USA Inc. (Sinon USA) to register a paraquat end-use product. These additional failures in Sinon USA's application call for EPA to grant Syngenta's *unopposed* Petition to Deny Sinon USA's Application to Register an End-Use Pesticide Product Containing the Active Ingredient Paraquat Dichloride Under the Proposed Name "ElixirTM."¹

On November 23, 2005, Sinon USA made an offer to pay Syngenta for two studies in support of its end-use application, including one acute oral toxicity study (MRID 43685001) conducted on Syngenta's technical paraquat product. *See* Sinon USA Data Compensation Offer for Paraquat SL HerbicideTM (November 23, 2005), enclosed as Exhibit 1.² Based on publicly available information, it appears that Sinon USA has submitted none of the core, required studies on the acute toxicity of its proposed paraquat product, and instead cites this one Syngenta study,

¹ It appears that Sinon USA may have changed the name of its proposed paraquat end-use product from "ElixirTM" to "Paraquat SL HerbicideTM." Syngenta's August 24, 2005 petition to deny applies to any Sinon USA applications for end-use products containing paraquat, including under the brand name "Paraquat SL HerbicideTM."

² This offer to pay was late and does not cure Sinon USA's failure to make an offer to pay at the time of application, an independent and legally sufficient basis to deny Sinon USA's application. *See* Syngenta Petition to Deny at pp. 10-13.

Angela Huskey, Esq.

December 12, 2005

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and likely cites five acute toxicity studies submitted by Sinon Corporation on Sinon Corporation's Paraquat Technical Concentrate.

EPA regulations require that in order to support an end-use registration, acute toxicological data on the specific end-use formulation must be submitted and analyzed. 40 C.F.R. § 158.340. Without these data, EPA cannot make the determination mandated by FIFRA § 3(c)(7)(A) regarding whether Sinon USA's paraquat product will cause a significant increase in unreasonable adverse effects on the environment or properly evaluate the worker protection aspects of Sinon USA's proposed label. Sinon USA's application should therefore be denied.

EPA should not deviate from its requirement that the acute toxicity profile of an applicant's end-use product be evaluated by tests conducted specifically on the product that the applicant proposes to introduce into the marketplace. This routine requirement is particularly compelling for a major herbicide like paraquat, and where serious questions have been raised regarding the adequacy of the data supporting the technical paraquat from which Sinon USA's "SL Herbicide" will be formulated. In light of these factors, it would be technically unsound to allow Sinon USA to rely on old acute toxicity testing performed on paraquat technical formulations with different percentages of active ingredient, as well as different inerts, emetics, and other constituents such as solvents. Moreover, as the Agency is aware, in recent years a different applicant secured a follow-on registration for paraquat, and later withdrew the product after testing on its end-use product revealed unacceptable levels of impurities.

In addition, it is a basic requirement to provide such acute toxicology data for the specific end-use product in order for EPA to make a determination on whether the Signal Word, Precautionary Statements, and Personal Protective Equipment that appear on the proposed label are appropriate for the specific formulation that Sinon USA is proposing to make and sell in the United States. Without this core, required acute toxicology data set, there is a high risk that the label approved for the proposed product will not be appropriate or adequate to fully protect the end-user or applicator. To Syngenta's knowledge, Sinon USA has provided no adequate justification for excusing the requirement in this instance for acute toxicology data generated using the specific manufacturing process at the site where Sinon USA proposes to manufacture its product.

Syngenta also emphasizes that while Sinon USA continues to press EPA to issue a paraquat end-use registration, the applicant has spurned EPA's petition process and refused to provide any answers to the serious questions raised in Syngenta's August 24, 2005 petition to deny. Sinon USA never responded to Syngenta's petition, even after Syngenta contacted Sinon USA and after Syngenta's November 9, 2005 letter alerting Sinon USA and EPA that more than 60 days had passed since the filing of Syngenta's petition with no response from Sinon USA. In addition to the new deficiencies described above, Syngenta urges EPA to deny this application for the following reasons:

Angela Huskey, Esq.
December 12, 2005
Page 3

- Registration of any end-use paraquat product that does not meet the human health and safety standard established by EPA's registration of Syngenta's manufacturing use and end-use products would create an illegal incremental risk under FIFRA.³
- Sinon USA may not support its application with the same flawed data matrix that Sinon Corporation submitted in support of its technical registration. Sinon Corporation's technical registration is unsupported by at least ten critical studies related to ecotoxicology, toxicology, worker exposure, environmental fate, and residue chemistry that are necessary to support a paraquat registration and that Sinon Corporation failed to cite or submit.
- Sinon USA cannot obtain a registration for an end-use product formulated from its affiliate Sinon Corporation's technical registration because that registration is void *ab initio* for the reasons stated in Syngenta's July 5, 2005 Petition to Revoke.
- Sinon USA's proposed label should be carefully scrutinized to ensure it did not incorporate the same unsupported uses that Syngenta's July 5, 2005 Petition to Revoke identified in Sinon Corporation's technical label, including residential uses which are explicitly prohibited by the paraquat 1997 Reregistration Eligibility Decision.
- Sinon USA's initial choice of a misleading and potentially dangerous trademark calls into question Sinon USA's ability to act as a responsible steward of paraquat, and its overall fitness to maintain a paraquat registration. EPA should take a close look at the existing concerns with regard to Sinon's complicity in illegal importation of pesticides in to the United States.

For these and other reasons stated in Syngenta's August 24, 2005 Petition to Deny, Syngenta respectfully requests that EPA act upon its unopposed Petition and deny Sinon USA's application.

³ On May 19, 2005, EPA approved the amendment of Syngenta's sole manufacturing use product to limit its use to making end-use products that meet the new health and safety standard, and Syngenta has requested voluntary cancellation of its end-use paraquat registrations that do not meet the new standard.

BEVERIDGE & DIAMOND_{PC}

Angela Huskey, Esq.

December 12, 2005

Page 4

Thank you for your consideration.

Sincerely,



Kathryn E. Szmuszkovicz

Counsel for Syngenta Crop Protection, Inc.

Enclosure

cc: B. Mallory (EPA)
J. Jones (EPA)
L. Rossi (EPA)
J. Tompkins (EPA)
T. Putsavage (Counsel for Sinon USA)

CERTIFICATE OF SERVICE

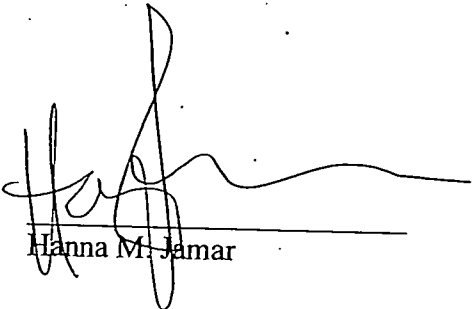
I hereby certify that on this 12th day of December, 2005, copies of the attached letter regarding Syngenta's Petition to Deny Sinon USA Inc.'s Application to Register an End-Use Pesticide Product Containing the Active Ingredient Paraquat Dichloride were delivered to the following by the method specified below:

Angela M.D. Huskey, Esq.
Pesticides and Toxic Substances Law Office
Office of General Counsel
U.S. Environmental Protection Agency
Ariel Rios Building, Mail Code 2333A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Hand Delivery

Telisport Putsavage
Wright & Sielaty
1990 Old Bridge Road
Lake Ridge, Virginia 22192-3026
Counsel to Sinon USA Inc.

FedEx



Hanna M. Jamar



11-28-05

1990 OLD BRIDGE ROAD, SUITE 201
LAKE RIDGE, VIRGINIA 22192-2383

DIRECT: 703-492-0541
MAIN: 703-492-0445
Fax: 703-492-0668

E-MAIL: butz@chemreg.com
WEB SITES: www.chemreg.com
www.pesticide.net

ROBERT G. BUTZ, PH.D.

November 23, 2005

Via Certified Mail

Regulatory Affairs
Syngenta Crop Protection, Inc.
P. O. Box 18300
Greensboro, NC 27419

Re: Data Compensation Offer for Paraquat SL Herbicide™, Containing the Active
Ingredient Paraquat Dichloride

Dear Sir or Madam:

In support of an application to register with the United States Environmental Protection Agency ("EPA") the pesticide product referenced above, Sinon USA Incorporated, 11080 Carol Lane Suite 264, Lafayette, California 94549, telephone number 925-299-1418, hereby offers to pay compensation to Syngenta Crop Protection ("Syngenta") with regard to EPA's approval of that application and to the extent required by section 3(c)(1)(F) of the Federal Insecticide, Fungicide and Rodenticide Act for the specific studies referenced in Attachment 1 hereto. Sinon USA hereby also offers to commence negotiations to determine the amount and terms of compensation, if any, to be paid for its use of the referenced studies.

To assist both parties in resolving any issues regarding this compensation offer, please provide the following information for each referenced study (if any) for which Syngenta seeks compensation. Please note that references to Syngenta mean the corporate entity that is listed in EPA's Data Submitters List as the actual data submitter, and not to any affiliate of Syngenta's.

1. The study MRID.
2. All EPA data requirements under which the study was submitted to EPA, as listed by EPA guideline number.

CONSULTANTS TO SUCCESSSM

Over One Hundred and Fifty Years of Combined Experience Assisting Chemical, Pesticide, Bio-Chemical and Life Science Companies on a Wide Range of Issues, Including Regulatory Strategies, Registration, Data Support and Compensation, Quality Assurance, Study Design and Scientific Matters.

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November 23, 2005

3. If the study was not submitted to EPA under a specific EPA guideline number, documentation showing that the study in fact was required, and the reason it was required, by EPA.
4. Supporting documentation regarding any EPA conclusion as to whether or not the study in fact was fully acceptable for satisfying the relevant EPA data requirement, or was classified by EPA as something other than fully acceptable.
5. The actual costs to Syngenta for the study, the amount and date of any payment toward those costs, the specific party that made the payment, and the specific party to which payment was made.
6. Copies of original source documents (such as invoices and payment records) for all of the costs and payments identified in item 5 above.
7. If Syngenta does not have documentation of its actual costs for the study, the basis for determining the cost of the study to Syngenta and documentation to substantiate that claimed cost.
8. The amount of compensation Syngenta seeks from Sinon USA for the study and the method used to calculate that amount.
9. Identify each party other than Syngenta that has directly contributed toward the cost of the study and the date and amount of such payments.
10. Identify each party that has contributed toward the cost of the study under EPA's formulator's exemption (40 C.F.R. § 152.85).
11. Identify each party other than Syngenta that has ownership, citation or other rights to rely upon the study (whether for EPA registration purposes, registration/approval with any other domestic or foreign governmental entity, or for any other governmental purpose), and the nature of those rights.
12. Identify each party that has cited the study for EPA registration purposes, the product(s) for which the citation relates, and the nature and value of any compensation or other consideration received by Syngenta for such citation (to the extent not identified in item 9 above).
13. Identify each U.S. state or foreign country to which the study has been submitted in whole, in part, or via a summary (whether by Syngenta or any other party), the purpose of that submission, and the party that made the submission.

Please direct all responses in this matter to me. If I do not hear from Syngenta within 30 days of receipt of this letter, Sinon USA will assume that Syngenta does not desire or is not entitled to compensation for the referenced studies. If Syngenta desires compensation, however, Sinon USA stands ready to deal in good faith and quickly resolve any obligations it may have under FIFRA §3(c)(1)(F) once it receives the information requested above.

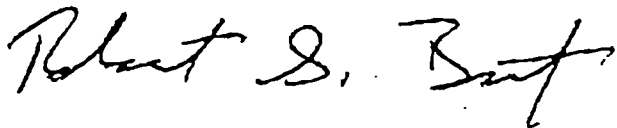
169

Syngenta Crop Protection

Page 3

November 23, 2005

Sincerely,

A handwritten signature in black ink, appearing to read "Robert G. Butz". The signature is fluid and cursive, with the first name "Robert" being more prominent than the last name "Butz".

Robert G. Butz

Authorized Representative for Sinon USA, Inc.

cc: Sinon USA Incorporated

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ATTACHMENT 1

Cited Dated Submitted By Syngenta

<i>Guideline Reference Number</i>	<i>Guideline Study Name</i>	<i>MRID Number</i>
870.1100	Acute oral toxicity	43685001
830.6314	Oxidation/reduction	44568701
830.6316	Explodability	44568701

Page _____ is not included in this copy.

Pages 172 through 178 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☐ Attorney-Client work product.
- ☒ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

Page _____ is not included in this copy.

Pages 179 through 181 are not included in this copy.

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- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
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Robert G. Perlis

July 5, 2005

Page 11

FIFRA's rules. Based on the information currently available to Syngenta, it appears that the only data that Sinon submitted to EPA are minimal product chemistry and acute toxicity data for its technical registration.⁵ Based on this information, Syngenta's knowledge of the paraquat database and requirements as to paraquat, as well as the information in Sinon's offer to pay, Sinon has failed to satisfy data requirements in the following categories of data required for registration of paraquat: ecotoxicology, toxicology, worker exposure, environmental fate, and residue chemistry. In total, Sinon must cite and offer to compensate Syngenta for the following additional ten studies that were not included in Sinon's compensation offer to Syngenta. The studies Sinon failed to cite are described in more detail in the sections that follow.

Required Studies Sinon Failed to Cite

MRID Number	Study
43942603	Paraquat -- Acute 5-Day Contact and Oral Toxicity to Honey Bees (Apis Mellifera)
43942604	The Effect of Paraquat On the Hatchability of Fertile Mallard Duck Eggs
43942605	The Effect of Paraquat on the Hatchability of Fertile Pheasant Eggs--Amended Report
43949902	Oral (Gavage) Mouse Developmental Toxicity Study--Paraquat Dichloride--Final Report
43964701	Paraquat--Developmental Toxicity Study in the Rat
44138801	Paraquat Dichloride--Zeneca's Response to the EPA Review of Developmental Toxicity--Review of Registrant Response to RED Chapter, Including Two New Studies: MRID Nos. 43964701 and 43949902
41317402	PC Powdered Diet: A Feeding Study in the Rat

Robert G. Perlis
July 5, 2005
Page 12

MRID Number

Study

43644201

Paraquat Dichloride--Margins of Exposure Calculation and Analytical Method for Worker Exposure Study Conducted During Mixing, Loading, and Application of Paraquat Dichloride Using Vehicle-Mounted, Ground Boom Equipment

41293202

Paraquat--Short Term Field Soil Dissipation Under In-Use Conditions in the USA (Sussex County, Delaware) During 1987-89--Analytical Report

40943704

Paraquat--Residue Transfer Study with Laying Hens Fed on a Diet Containing the Herbicide

1. Ecotoxicology

Sinon failed to cite three necessary ecotoxicology studies related to paraquat's toxicological effects on honey bees and birds. Sinon did not cite a study on toxicity to honey bees (MRID number 43942603⁶) even though EPA's Ecological Effects Branch (EEB) reviewed the study and determined it to be a "Core" study for paraquat. See June 12, 1996 Data Evaluation Record Acute Contact Toxicity Test with Honey Bee § 141-1, MRID No. 43942603, Reviewed by A. Vaughn (Ecological Effects Branch (EEB), Environmental Fate and Effects Division (EFED)). EPA discussed this study in the RED. EPA found that the study fulfills the data requirement for guideline 141-1 and is required "if the proposed use will result in honey bee exposure," a criterion easily triggered for the paraquat uses on Sinon's label. See RED at 66. The honey bees study is required for the registration of paraquat, and Sinon must cite it and offer to pay compensation to Syngenta.

Nor did Sinon cite two ecotoxicology studies submitted by Syngenta on March 1, 1996 on avian reproduction that were relied on by EPA (MRID numbers 43942604⁷ and 43942605⁸). These studies were generated in specific response to EPA's Ecological Effects Branch's

⁶ MRID 43942603, Bull, J.M., Wilkinson, Paraquat -- Acute 5-Day Contact and Oral Toxicity to Honey Bees (*Apis Mellifera*).

⁷ MRID 43942604, Chanter, D.O., Hakin B., The Effect of Paraquat On the Hatchability of Fertile Mallard Duck Eggs.

⁸ MRID 43942605, Chanter, D.O., Hakin, B., Roberts, N.L., The Effect of Paraquat on the Hatchability of Fertile Pheasant Eggs--Amended Report.



United States
Environmental Protection Agency
 Washington, DC 20460
Formulator's Exemption Statement
 (40 CFR 152.85)

Applicant's Name and Address

Sinon USA Inc.
 1080 Carol Lane, Suite 264
 Lafayette, CA 94549

EPA File Symbol/Registration Number
 82557-R

Product Name
 Paraquat SL Herbicide

Date of Confidential Statement of Formula (EPA Form 8570-4)
 October 3, 2005

As an authorized representative of the applicant for registration of the product identified above, I certify that:

(1) This product contains the following active ingredient(s): paraquat dichloride

(2) Of these, each active ingredient listed in paragraph (4) is present solely as the result of the use of that active ingredient in the manufacturing, formulation or repackaging another product which contains that active ingredient which is registered under FIFRA Section 3, is purchased by us from another person, and meets the requirements of 40CFR section 158.50(e)(2) or (3).

(3) Indicate by checking (A) or (B) below which paragraph applies:

☐ (A) An accurate Confidential Statement of Formula (EPA FORM 8570-4) for the above identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the active ingredient(s) listed in paragraph (1)

OR

☒ (B) The Confidential Statement of Formula (CSF) (EPA Form 8570-4) referenced above and on file with the EPA is complete, current, and accurate and contains the information required on the current CSF

(4) The following active ingredients in this product qualify for the formulator's exemption

Source		
Active Ingredient	Product Name	Registration Number
Paraquat dichloride (CAS #1910-42-5)	[REDACTED]	[REDACTED]
Signature <i>Robert G. Butz</i>	Name and Title Robert G. Butz, Authorized Representative ChemReg international, LLC	Date December 5, 2005



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date: December 5, 2005	EPA Reg No./ File Symbol 82557-R	Page 1 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549	Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
Group A Product Chemistry:					
830.1550	Product identity and composition	46613801	Sinon USA Inc.	Own	
830.1600	Starting materials	46613801	Sinon USA Inc.	Own	
830.1650	Method of manufacture	46613801	Sinon USA Inc.	Own	
830.1670	Discussion of formation of impurities	46613801	Sinon USA Inc.	Own	
830.1700	Preliminary analysis	46613801	Sinon USA Inc.	Own	
830.1750	Certification of limits	46613801	Sinon USA Inc.	Own	
830.1800	Enforcement analytical method	46613801	Sinon USA Inc.	Own	
Group B Product Chemistry:					
830.6302	Color	46659506	Sinon USA Inc.	Own	
830.6303	Physical state	46659506	Sinon USA Inc.	Own	
830.6314	Oxidation/reduction	44568701	Syngenta	Pay	
830.6316	Explosibility	44568701	Syngenta	Pay	
830.6317	Storage stability	46659501	Sinon USA Inc.	Own	
		46659502	Sinon USA Inc.	Own	
830.6320	Corrosion characteristics	46659502	Sinon USA Inc.	Own	
830.7000	pH	46659503	Sinon USA Inc.	Own	
830.7100	Viscosity	46659504	Sinon USA Inc.	Own	
830.7300	Density	46659505	Sinon USA Inc.	Own	

Signature <i>Robert G. Butz</i>	Name and Title Robert G. Butz Ph.D. ChemReg International Authorized Agent for Sinon USA Incorporated	Date December 5, 2005
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EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

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DATA MATRIX

Date: December 5, 2005	EPA Reg No./ File Symbol 82557-R	Page 2 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549	Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
Acute Toxicity:					
870.1100	Acute oral toxicity	43685001	Syngenta	Pay	
870.1200	Acute dermal toxicity	46098803	Sinon Corp.	PER	
870.1300	Acute inhalation toxicity	46098804 139559 46105 153733	Sinon Corp Chevron Chevron Syngenta	PER Old Old Old	Per RED Per RED
870.2400	Eye irritation	46098805	Sinon Corp.	PER	
870.2500	Dermal irritation	46098806	Sinon Corp.	PER	
870.2600	Dermal Sensitization	46098807	Sinon Corp.	PER	

Signature <i>Robert G. Butz</i>	Name and Title Robert G. Butz Ph.D. ChemReg International Authorized Agent for Sinon USA Incorporated	Date December 5, 2005
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Page _____ is not included in this copy.

Pages 187 through 188 are not included in this copy.

The material not included contains the following type of information:

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- _____ Identity of product impurities.
- _____ Description of the product manufacturing process.
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- _____ Identity of the source of product ingredients.
- _____ Sales or other commercial/financial information.
- _____ A draft product label.
- _____ The product confidential statement of formula.
- _____ Information about a pending registration action.
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Page 1 of 2

EPA Reg No./ File Symbol 82557-R

Applicant's/Registrant's Name and Address:

Sinon USA Incorporated
1080 Carol Lane, Suite 264
Lafayette, CA 94549

Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)

Ingredient: paraquat dichloride

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
Group A Product Chemistry:					
830.1550	Product identity and composition	46613801	Sinon USA Inc.	Own	
830.1600	Starting materials	46613801	Sinon USA Inc.	Own	
830.1650	Method of manufacture	46613801	Sinon USA Inc.	Own	
830.1670	Discussion of formation of impurities	46613801	Sinon USA Inc.	Own	
830.1700	Preliminary analysis	46613801	Sinon USA Inc.	Own	
830.1750	Certification of limits	46613801	Sinon USA Inc.	Own	
830.1800	Enforcement analytical method	46613801	Sinon USA Inc.	Own	
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830.6302	Color	46659506	Sinon USA Inc.	Own	
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830.6314	Oxidation/reduction	44568701	Syngenta	Pay	
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830.6317	Storage stability	46659501	Sinon USA Inc.	Own	
		46659502	Sinon USA Inc.	Own	
830.6320	Corrosion characteristics	46659502	Sinon USA Inc.	Own	
830.7000	pH	46659503	Sinon USA Inc.	Own	
830.7100	Viscosity	46659504	Sinon USA Inc.	Own	
830.7300	Density	46659505	Sinon USA Inc.	Own	

Signature _____

Name and Title
Robert G. Butz Ph.D. ChemReg International Authorized Agent for S

Date
November 17,
2005

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DATA MATRIX

Date: November 17, 2005	EPA Reg No./ File Symbol 82557-R	Page 2 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549		Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
Acute Toxicity:					
870.1100	Acute oral toxicity	43685001	Syngenta	Pay	
870.1200	Acute dermal toxicity	46098803	Sinon Corp.	PER	
870.1300	Acute inhalation toxicity	46098804	Sinon Corp.	PER	
		139559	Chevron	Old	Per RED
		46105	Chevron	Old	Per RED
		153733	Syngenta	Old	Per RED
870.2400	Eye irritation	46098805	Sinon Corp.	PER	
870.2500	Dermal irritation	46098806	Sinon Corp.	PER	
870.2600	Dermal Sensitization	46098807	Sinon Corp.	PER	

Generic data supporting this product is shown in the data matrix for Paraquat Technical Concentrate, EPA Registration Number 70552-1, dated May 2, 2005.

Signature 	Name and Title Robert G. Butz Ph.D. ChemReg International Authorized Agent for Sinon USA Incorporated	Date November 17, 2005
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Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number Sinon USA Incorporated, 1080 Carol Lane, Suite 264, Lafayette, California 94549 Phone: 925-299-1418	EPA Registration Number/File Symbol 82557-R
---	---

Active Ingredient(s) and/or representative test compound(s) paraquat dichloride	Date November 23, 2005
---	------------------------

General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial Food Crop, Terrestrial Food & Feed Crop, Terrestrial Feed Crop, Terrestrial Non-Food Crop, Forestry	Product Name Paraquat SL Herbicide
---	------------------------------------

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulators Exemption Statement (EPA Form 8570-27)

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

<input type="checkbox"/> I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose)	<input checked="" type="checkbox"/> I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).
---	---

SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method, or when using the cite-all option under the selective method to satisfy one or more data requirements]

☒ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA

SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section 1, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitted to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment of both under applicable law.

Signature

K. C. Lin

Date

November 23,
2005

Typed or Printed Name and Title

K. C. Lin
Vice President
Sinon USA Incorporated

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 9 2005

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Robert Butz
Sinon USA Corp
1990 Old Bridge Rd
Suite 201
Lake Ridge, VA 22192-2383

Dear Mr. Butz:

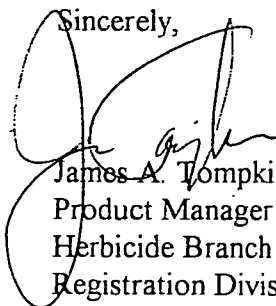
Subject: Paraquat SL Herbicide
EPA File Symbol Number 82557-R
Submission Dated August 2, 2005

The label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is unacceptable. The label will be deemed acceptable only after the following changes are made, resubmitted, and approved:

1. Please refer to the attached list of label deficiencies.

Submit three (3) copies of printed labeling incorporating the above changes for review. If you have any questions, please contact Hope Johnson at 703-305-5410.

Sincerely,


James A. Tompkins
Product Manager 25
Herbicide Branch
Registration Division (7505C)

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ATTACHMENT:

Label Changes Required for 82557-R Paraquat SL Label

- Add an appropriate EPA Establishment # to the label (condition of registration)
- Change the order of the FIRST AID statements to the following: IF SWALLOWED, IF INHALED, IF IN EYES, IF ON SKIN OR CLOTHING
- In the section FIRST AID statements, subsection IF INHALED, change the word "Stanching" to "Stenching"
- Change the PRECAUTIONARY STATEMENTS to the following: "DANGER. May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist respirator. Causes irreversible eye damage. Wear protective eyewear. Do not get in eyes or on clothing. Avoid contact with skin.
IMPORTANT: Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin."
- Change the heading "PERSON PROTECTIVE EQUIPMENT (PPE)" to "PERSONAL PROTECTIVE EQUIPMENT (PPE)".
- In the section PPE, under Mixers and Loaders Must Wear, remove "protective eyewear," as a face shield is already required and listed.
- Remove "DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS." from before the Engineering Controls section.
- Add the following statements to the ENVIRONMENTAL HAZARDS section in the 2nd paragraph: "Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion."
- Add the following statement to the section Physical And Chemical Hazards on page 4, "This product is compatible with high density polyethylene and rubber lined steel containers."
- On page 6, before the subheading "Information on Droplet size" add the heading "Aerial Drift Reduction Advisory Information"
- On page 9, in the section Rates of Paraquat SL Herbicide, the second sentence, remove "when weeds are dense or larger" from the end of the sentence as it is repetitive information. Also, change the last sentence to "Do not exceed 0.50 lbs a.i./A in a minimum of 30 gallons of spray for broadcast applications with backpack sprayers."
- On page 9, in the section Spray Volumes, change the first sentence to "With each use, follow the recommended minimum spray volumes listed in the following tables."
- On page 10, change the tank mixture "Lariate" to "Lariat"
- Change the statements "Read the respective product labels for Directions for Use" on page 11 to "Always refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions." Use this statement throughout the label

in the following tables as well.

- On page 12, change "damage" to "damaged" in the 7th bullet
- On page 12, in the section Alfalfa-California only New Seedlings, change "Cut or harvest 70 days after application" to "Do not cut or harvest within 70 days after application."
Add the statement "Alfalfa foliage present at time of application will be burned."
- On page 12, in the section Alfalfa-Preplant or Preemergence (no-till or conventional planting) add the statement "Crop plants emerged at time of application will be killed."
- On page 12, in the section Alfalfa-Dormant season established plantings, change the statement "Cut or harvest after 42 days of application" to "Do not cut or harvest within 42 days after application."
- On page 13, in the section Alfalfa-Dormant season Tank mix with Velpar L, change the statement "Crop injury may occur if stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought or frost may increase the chances of crop injury." to "Increased chances of crop injury may occur due to stress which may be caused in part by low fertility, disease, insects, winterkill, overcutting, drought, or frost."
- On page 13, in the section Alfalfa Dormant season, add the minimum total spray per acre listing of "Air 5 gals" for the rows "on established plantings-Region B" and "On fall-seeded newly established stands less than 1 year old- Region A".
- On page 13, in the section Alfalfa Dormant season, in the 5th bullet add the statement "Green alfalfa foliage present at time of application will be burned."
- On page 14, in the section Alfalfa (For use in only the following states: ID, MT, NV, OR, UT, WA, WY) change the statement "harvest at least 4 days after application" to "Do not harvest until at least 4 days after application."
- On page 14, in the section Alfalfa (For use in only the following states: ID, MT, NV, OR, UT, WA, WY), in the 5th bullet, change "Does not" to "Do not" in the second sentence.
- On page 14, in the section Alfalfa (For use in only the following states: ID, MT, NV, OR, UT, WA, WY), change the last bullet to "Remove ALL Paraquat SL Herbicide/Reglone treated alfalfa seed screenings from the feed market because all screenings from the alfalfa seed processing are prohibited from feed channels."
- On page 16, in the section ARTICHOKE (globe) change the statement "Apply at least 7 days apart." to "Applications must be made at least 7 days apart." Change the statement "Harvest 24 hours after last application" to "Do not harvest within 24 hours of last application."
- On page 16, in the section Asparagus (preemergence to established plantings at least 2 years old) change the second bullet to "Applications should be made prior to emergence of the crop or after last harvest."
- On page 17, change "not for in California" to "NOT FOR USE IN CALIFORNIA". Also add this statement after the "Dry Peas" listing. Add "Lima beans" to the Dry Beans listing. Change the 3rd bullet to "Use a single application of the higher rate for vining type of beans or bush type of lush growth." In the fourth bullet the sentence is cut off. Add the following to the last sentence "than 2 applications per year or exceed a total of 1.3 pints per acre. Add an additional bullet that states "Not registered for use on dry beans and dry peas in California."

- On page 17, in the section BERRIES, add "boysenberries" to the berry listing.
- On page 18, in the section Cacao, change the statement "To prevent injury use a shield for young trees to prevent sprays from contacting cacao plants" to "Use a shield for young trees to prevent spray to contact cacao plants, as injury may result."
- On page 18, in the section Cassavas, Taniers and Yams, change the 4th bullet to "Prevent injury to crop by preventing spray **from** contacting crop."
- On page 18, in the General Information for Chemical Fallow section, change the 5th bullets last sentence to "Refer to the 2,4-D ester (low volatile), Banvel or residual herbicide label(s) for rates of application, directions for use, limitations, and restrictions."
- On page 18, in the General Information for Chemical Fallow section, change the 6th bullet to the following "It is permissible to tank mix with registered residual herbicide **combinations** other than **those** listed for extended weed control during the fallow period."
- On page 18, in the General Information for Chemical Fallow section, add the following statement "The minimum total spray per acre allowed is 5 gallons for ground and 5 gallons for air application."
- Remain consistent in the entire table by adding a PHI column.
- On page 19, in the section Chemical Fallow (Continuous wheat 2-3 month recropping interval) change the rate for weeds 3-6" from 1.7-2.7 pts to **1.7-2.0 pts**. Change the statement (refer to "General Information" section) to "(Refer to the Chemical Fallow General Information section)"
- On page 19, for the last four chemical fallow sections, add the following statement to each "Refer to the Chemical Fallow General Information section"
- On page 19, in the section Chemical Fallow Wheat-Fallow-Wheat Rotations (Fall applied after harvest) change "12-13 months later" to "12-14 months later". Change the rate for weeds 6" from 2.2.7 to **2-2.7 pts**. Change the 3rd bullet to "Control of volunteer wheat and downy brome increases when applications are made late August or early September." Remove "improved" from the 5th bullet. Revise the last bullet to "Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions."
- On page 19, in the section Chemical fallow Wheat-fallow-wheat rotations (Spring applied seeded 3-5 months later), change the rate for weeds 6" from 2.2.7 pts to **2-2.7 pts**. Change the 5th bullet to "For **burndown and residual control** of grass and broadleaf weeds, tank mix with metribuzin (Sencor 75DF/Lexone)." Change the last bullet to "Refer to the metribuzin (Sencor 75DF/Lexone) label for rates of application, directions for use, limitations, and restrictions."
- On page 19, in the section Chemical Fallow Wheat-Annual Crop-Wheat rotations (fall applied in wheat stubble), change the 2nd bullet second sentence to "Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions."
- On page 19, in the section Chemical Fallow Wheat-Annual Crop-Wheat rotations (spring applied prior to planting an annual crop), change the rate for weeds 6" from 2.2.7 to **2-2.7 pts**. In the second bullet, change the second sentence to "Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions."
- On page 20, in the section CLOVER AND OTHER LEGUMES, remove the statement "If

ryegrass, shepherdspurse, sowthistle or groundsel are present, use the high rate" from the Weeds column and place in a bullet under the Precautions section with the preceding statement "IN CALIFORNIA." Change the 2nd bullet to "Applications should be made during late fall or winter months after the late fall cutting and before first spring cutting." Change the third bullet to "Do not apply if regrowth after grazing or cutting is more than 2".

- On page 21, in the section CORN (Tank mixes for no-till/reduced till) change the last bullet to "Paraquat SL Herbicide may also be tank mixed with Ambush insecticide. Refer to the respective product label(s) for rates of application, directions for use, limitations, and restrictions, and if these products can be applied by air."

- On page 22 in the section FIELD CORN, POPCORN, SWEET CORN, SEED CORN, change the 8th bullet to "Corn plants shorter than 10" may be injured and not recover." Change the very last bullet to "Injury to corn foliage will occur if sprayed. However, corn will recover and develop normally."

- ON page 23, in the section FIELD CORN, POPCORN, SEED CORN, change the 4th bullet rate from 1.5 pts to 1.3 pts. (1.3 pts is the maximum rate allowed.)

- On page 24, in the section Cotton-other tank mixes, place a parentheses after "(Preplant only", and place "Meturon Herbicide" on it's own line.

- On page 24, change the heading COTTON Harvest Aid Precautions to "COTTON Harvest Aid RESTRICTIONS". Remove the statement "(applies to all sections)."

- On page 28, in the section GRASSES, change the 4th bullet to "Applications may be repeated as necessary (but only up to 3 applications per year) prior to grass emergence."

- On page 29, in the section HOPS, change the 7th bullet to "Spray only the basal 2 ft. of the vines for sucking and stripping. Repeat as necessary, but only up to 3 applications per season."

- Please note: the section PERSIMMON is missing from the label.

- On page 32, change the 7th bullet to "DO NOT exceed 2.6 pints per acre per season."

- On page 33, in the section RICE, change the minimum total spray per acre allowed for ground from 5 gals to 10 gals.

- On page 33, in the section Small Grains (Wheat Only), change the minimum total spray per acre allowed for ground from 5 gals to 10 gals.

- On page 36, in the section SOYBEANS, the 4th bullet statement has been cut off. Add "fall panicum, use 5.3 fl oz of Paraquat SL Herbicide" to the end of the sentence.

- On page 36, in the section SOYBEANS, change the 9th bullet to "If necessary, make a second and final application 7-14 days later."

- On page 38, lengthen the row column width so that the words are not cut off.

- On page 38, in the section SUGARCANE, change the first bullet to "Do not make more than 2 applications per year, except in Florida and Texas in which the maximum number of applications allowed is 1 per year."

- On page 38, in the section SUGARCANE, add "Harvest Aid to the column Use Pattern for the row "Florida and Texas".

- On page 38, in the section SUNFLOWER, change the rate per acre from 1.7-2.7 to 1.7-

2.7 pts.

- On page 38, in the section TREE PLANTATION ESTABLISHMENT, in the second bullet change "weds" to "**weeds.**"
- On page 39, in the section TREES AND VINES, add "Pecans" to the list of trees and vines. Add the following bullet in the restrictions section "For peaches: do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season."
- On page 40, in the section VEGETABLES, add "Endive (Escarole) to the list of vegetables. Change the 4th bullet to "For heavier weed infestations, use the higher rate." as the current statement is repetitive.
- On page 42, in the section Tree Selection, change the statement "Trees should be selected from stands on sites not subject to stress from periods of extreme drought stress because the desiccating effect of Paraquat SL Herbicide" to "Trees should be selected from stands on sites not subject to stress from periods of extreme drought because the desiccating effect of Paraquat SL Herbicide"
- On page 43, widen the width of the column crop so that words are not cut off.
- On page 43, in the section NONCROP USES, change the last bullet to "Avoid spray contact with the foliage of ornamentals or desired plants.
- On page 45, in the section For Prickly Pear Desiccation in Pastures, change the second bullet to "Hand-held equipment such as knapsacks, backpack sprayers, **pump-up pressure sprayers, hand-guns and handwands** can be used to direct the spray onto weed foliage for spray to wet applications."
- On page 45, in the section For Prickly Pear Desiccation in Pastures, change the 4th bullet to "Completely and uniformly cover all green prickly pear foliage **with spray.**"
- On page 47 in the WARRANTY section, add the statement "**To the extent allowed by law**" before the statements "All such risks shall be assumed by Buyer and User." **and** "The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product."

Reviewed label

11/9/05

RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS
UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED
BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

PARAQUAT SL HERBICIDE™*Defoliant and desiccant herbicide**for the control of weeds and grasses and as a harvest aid.*

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID.
- SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE STENCHING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-Bipyridinium dichloride) 43.8%

Other Ingredients: 56.2%

Total: 100.0%

Contains 3.0 pounds paraquat cation per gallon as 4.143 pounds salt per gallon. Contains
stench (odor) and emetic

KEEP OUT OF REACH OF CHILDREN**DANGER/PELIGRO****POISON**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

EPA Reg. No. 82557-R**EPA Est.:** **Net Contents:**

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[FRONT PANEL CONTINUED]

FIRST AID	
Contains Paraquat, a Bipyrindinium Herbicide	
Have the product or label with you when calling a poison control center or doctor, or going for treatment.	
1 II If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor IMMEDIATELY for treatment advice. • SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an absorbent such as activated charcoal, bentonite or Fullers Earth. • Have person sip a glass of water if able to swallow. <i>keep</i> • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
3 I If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
4 III If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
2 I If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • The odor of this product is from the <i>stanching</i> agent, which has been added, not from the paraquat. • If person is not breathing, call 911 or an ambulance. • Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15m/kg body weight in children). NOTE: The use of gastric lavage without administration of an absorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat; however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
HOT LINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call CHEMTREC 1-800-424-9300.	

See back/side panel[s] for additional precautionary statements.

If swallowed
 If inhaled
 If in eyes
 If on skin or clothing

Precautionary Statements**Hazards to Humans and Domestic Animals**

DANGER. May be fatal if swallowed. Fatal if inhaled. ~~Causes substantial but temporary eye injury.~~ *Causes irreversible eye damage.* Harmful if absorbed through skin. ~~Prolonged contact with this concentrated product may cause irritation on your skin.~~ *Wear protective eyewear.* Do not get in eyes or clothing. Avoid contact with skin. ~~Do not breathe spray mist.~~ *Do not inhale spray mist.* Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse. *Wear a dust respirator.*

IMPORTANT: Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. *Prolonged contact with this concentrated product can irritate your skin.*

Person Protective Equipment (PPE)

Applicators and other handlers (other than mixers and loaders) must wear:

- ✓ • Long-sleeved shirt and long pants
- ✓ • Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- ✓ • Shoes plus socks
- ✓ • Protective eyewear
- ✓ • A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

Mixers and loaders must wear:

- ✓ • Long-sleeved shirt and long pants
- ✓ • Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- ✓ • Shoes plus socks
- ~~✓ • Protective eyewear~~ *Remove because of face shield requirement*
- Dust mist NIOSH-approved respirator with ANY N, R, P, or HE filter.
- Chemical resistant apron
- Face Shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations**Users should:**

- Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This product is toxic to wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs because it desiccates all green plant tissue. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Refer to the local state laws, regulations, guidelines, and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings.

DIRECTIONS FOR USE

Restricted Use Pesticide. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSE OR PLAYGROUNDS.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to use of this product that are covered by the Worker Protection Standard.

For preplant or preemergence (broadcast or banded), chemical fallow, postemergence directed spray applications, early postemergence broadcast in Peanuts and dormant season applications, and "between cutting" applications in alfalfa: Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For harvest aid and desiccation application: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

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NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow others to enter the treated area until sprays have dried.

AVOID working in spray mist.

KEEP all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Store in original container and place in a locked storage area. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. Store at temperatures above 32°F. For Emergencies involving a Spill, Leak, Fire, Exposure, or Accident, Contact: CHEMTREC at (800) 424-9300. ~~Place incompatible containers in a safe area.~~

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not reuse container as container is not safe for food, feed or drinking water! Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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GENERAL INSTRUCTIONS AND INFORMATION

Do not apply this product through any type of irrigation system.

When PARAQUAT SL HERBICIDE™ is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive SHOULD be used. Refer to the additive label for use directions.

Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information.**

Aerial Drift Reduction Advisory Information **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environment conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle that is designed for the intended application. With most nozzle types, narrower spray angles produce droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

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Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10-mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

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GENERAL INFORMATION

APPLICATION

PARAQUAT SL HERBICIDE™ is a contact herbicide is for control or suppression of a broad spectrum of emerged weeds including most annual small broadleaf and grass weeds. It can also be used to suppress perennial weeds by destroying green foliage and as a desiccant/defoliant at harvest.

Complete coverage of target weeds is necessary to get good control because PARAQUAT SL HERBICIDE™ is a contact-type herbicide. It is also necessary to obtain complete coverage for good crop desiccation and defoliations. Undesirable weed control and undesirable crop desiccation/defoliation will result if improper application technique and/or application to large, stressed, or mown weeds are made. Refer to the following details for specific application instructions.

PARAQUAT SL HERBICIDE™ is a liquid formulation containing 3 lbs. of active ingredient per gallon. It contains a nontoxic odor to help prevent accidental ingestions. It also contains an emetic (an agent which will induce vomiting if the product is swallowed).

Through coverage of all green foliage is required for efficacious weed control and crop defoliation and desiccation because PARAQUAT SL HERBICIDE™ requires actively growing green plant tissue to function. Drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines are unaffected by application with PARAQUAT SL HERBICIDE™.

There is no residual soil activity to affect later-planted crops or later germinating weeds because clay and organic matter rapidly tie up PARAQUAT SL HERBICIDE™.

ROTATIONAL CROPS

After the last application PARAQUAT SL HERBICIDE™, all rotational crops may be planted immediately.

RAINFASTNESS

Rain occurring 30 minutes or more after application will have no effect on the activity of PARAQUAT SL HERBICIDE™ because it is rapidly absorbed by the weed foliage.

USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

The following should always be added and be used at the recommended rates or there will be a reduction in efficacy of PARAQUAT SL HERBICIDE™.

Nonionic Surfactant: Either add a nonionic surfactant containing 50-74% surface-action agent at 0.25% v/v (2 pts./100gals.), or add nonionic surfactant containing 75% or more surface-active agent at 0.125% v/v (1pt./100gals.), of the finished spray volume for groups applications. Add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume for aerial applications.

Crop Oil Concentrate: For ground applications, add a nonphytotoxic crop oil concentrate that contains 15-20% approved emulsifier, with 1.0% v/v (1 gal./100 gals.) of the finished spray volume. Add 1 pt. of crop oil concentrate per acre for aerial applications. For cotton harvest aid, do not use crop oil concentrate when using PARAQUAT SL HERBICIDE™.

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NOZZLE SELECTION

The use of flat-fan nozzles is the most effective application of PARAQUAT SL HERBICIDE™. The use of flood nozzles may result in a reduction of weed control due to inadequate coverage because they produce large uneven droplets.

Use only flat fan nozzles when spraying less than 20 gallons of spray carrier per acre using the following table.

Table 1. Recommended Nozzle Type and Spray Pressures and Setup

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

Reduced control will result if nozzles, pressures, or setups differ from the above chart.

SPRAY CARRIER

PARAQUAT SL HERBICIDE™ may be inactivated by muddy water, or suspensions-type fertilizers containing clay. Therefore, always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying PARAQUAT SL HERBICIDE™. Never use suspension-type fertilizers containing clay as the spray carrier. Always use the higher rate of PARAQUAT SL HERBICIDE™ and surfactant if using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier.

Note: It is important that when using liquid fertilizers such as 28% N as a spray carrier, that nonionic surfactant still be used with PARAQUAT SL HERBICIDE™. The use of liquid fertilizer carriers are not substitutes for surfactants.

RATES OF PARAQUAT SL HERBICIDE™

With each use, follow recommended rates listed in the following tables. When weeds are larger or are dense, use the higher label rates ~~when weeds are dense or larger~~. For use as a harvest aid, use higher rate when crop vegetation is dense. Do not exceed 0.50 lbs. a.i./A in a minimum of 30 gallons of spray. *for broadcast applications with backpack sprayers.* ✓

SPRAY VOLUME

minimum spray volumes

With each use, follow recommended ~~rates~~ listed in the following tables. Spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage because the volumes listed are minimum volumes only.

TARGET WEEDS SHOULD NOT EXCEED SIX INCHES IN HEIGHT WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE.

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Application Timing

Applications should be made to small emerged weeds. Larger weeds more than 6 inches in height may be more difficult to control than weeds 1 – 6 inches in height. If possible, when green foliage is removed either from grazing or mowing, allow the weeds to grow 2-4 inches in height. Also, during harvesting forage or grain crops before spraying, weeds present in the field are also cut. Therefore, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height allowing sufficient green foliage to remain for applications.

BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

The best results occur for control of grass cover crops or volunteer cereals, when PARAQUAT SL HERBICIDE™ is applied prior to tillering or after boot stage, especially with a wheat cover crop or volunteer wheat. Complete control may not be achieved with treatments made between tillering and boot stage. Complete control of perennial cover crops should not be expected.

ENVIRONMENTAL CONDITIONS

This product is active over a wide range of environmental conditions such as cool (below 55°), cloudy or overcast weather. However these conditions will slow the activity of PARAQUAT SL HERBICIDE™.

SPOT SPRAYING

Refer to the following table if only small areas are to be sprayed with labeled applications.

Mixing Instructions for Small Quantities for Spot Spraying

If the Broadcast Rate Per Acre for PARAQUAT SL HERBICIDE™ is:	Add The Following Amount of PARAQUAT SL HERBICIDE™ to 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. Oz.

Add 1/3- 1/2 fl. oz. of a nonionic surfactant for each gallon of spray at all times. Thoroughly wet the foliage, but not to the point of runoff when spot spraying in this manner.

TANK MIXING: ENHANCED BURNDOWN OF DIFFICULT-TO-CONTROL WEEDS AND FOR RESIDUAL WEED CONTROL**Photosynthetic Inhibitor Herbicides**

To control difficult weeds, tank mix PARAQUAT SL HERBICIDE™ with other herbicides. The addition of other photosynthetic inhibitors (PSI) herbicides will slow the activity of PARAQUAT SL HERBICIDE™. This allows PARAQUAT SL HERBICIDE™ to thoroughly distribute throughout a treated leaf, thus achieving better control than if PARAQUAT SL HERBICIDE™ was applied alone.

PARAQUAT SL HERBICIDE™ may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide
Atrazine Herbicide
Bicep MAGNUM® Herbicide
Bicep Lite II MAGNUM® Herbicide
Canopy® Herbicide

Lariate ?
Lariate® Herbicide
Lexone® Herbicide
Linex® Herbicide
Lorox® Herbicide
Lorox Plus™ Herbicide

Princep® Herbicide
Sencor® Herbicides

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Read the respective product label(s) for Directions for Use.

Observe all use precautions + limitation of on labeling of products used in a particular tank mix.

Improved Weed Control with PSI's

The addition of a PSI herbicide will help improve the control of difficult weeds listed below. Make a second application for best results.

Barnyardgrass	Kochia	Perennial weeds (suppression only)
Broadleaf signalgrass	Lambsquarters	Prickly lettuce
Cheatgrass	Malva (cheeseweed)	Sedges
Cocklebur	Marestail	Tansymustard
Fall panicum	Morningglory	Velvetleaf
Giant ragweed	Pennsylvania smartweed	Volunteer wheat
Knotweed		

Improved Control of Perennial and Annual Broadleaf Weeds

Tank mixing with labeled 2,4-D ester (Low Volatile), 2,4-DB or Banvel® herbicide will help improve control when perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc., or difficult to control annual broadleaf weeds such as giant ragweed or morning glory are present. Reduced grass control may be achieved when tank mixing the amine formulation of 2,4-D with PARAQUAT SL HERBICIDE™.

Order of Tank Mixing

It is advisable to tank mix PARAQUAT SL HERBICIDE™ and other listed products as follows:

1. Fill spray tank ½ full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add PARAQUAT SL HERBICIDE™ to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always read other pesticide products labels for Directions for Use.

It is advisable to perform a jar test to check physical compatibility when using different formulation of the herbicides listed on this label.

GENERAL PRECAUTIONS AND RESTRICTIONS

EQUIPMENT

PARAQUAT SL HERBICIDE™ is corrosive to aluminum. Thoroughly flush all aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift with water immediately after use.

The activity of PARAQUAT SL HERBICIDE™ may be reduced in dry areas where dust stirred up by high winds or equipment tires can coat weed or plant leaves. Therefore, avoid applications in extremely dusty conditions.

*Always refer to the respective...
Use throughout the label.*

LIMITATIONS AND PRECAUTIONS

Unless otherwise indicated, PARAQUAT SL HERBICIDE™ will severely injure or kill crop plants emerged at time of application if they come in contact with sprays.

- Do not pasture livestock in treated fields or feed treated foliage in cotton when this product is used as a cotton harvest aid.
- DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- Do not apply to soils lacking clay minerals such as peat, muck, pure sand, artificial planting media for preplant and preemergence (to the crop) uses.
- To enable maximum weed and grass emergence prior to treatment, seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible.
- Avoid disturbing soil when seeding or transplanting.
- Transplanted plants may become damaged when they come in contact with plastic mulch used for preplant weed control and that has been treated with this product. To prevent damage to the crop, sufficient wash-off such as rainfall or sprinkler irrigation prior to planting may be needed.
- PARAQUAT SL HERBICIDE™ will be ineffective in control or suppressing weeds and grasses that have emerged after application.

APPLICATION INSTRUCTIONS

Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Additional Precautions, Restrictions and Directions
ALFALFA (California only) New seedlings		Broadcast	0.7-1.3 pts. See Table 2	Ground: 10 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than one application per year. Applications should be made during late winter or early spring. Cut or harvest 70 days after application. Replanting may be needed due to the reduction of seedling stands. Do not apply to seedling alfalfa grown for seed.
ALFALFA Preplant or Preemergence (No-till or conventional planting)		Broadcast or Banded Over-Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply prior to emergence of the crop. Avoid disturbing soil when seeding.
ALFALFA Dormant season Established plantings Region A – See table at end of Alfalfa section	Weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.	Broadcast	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than one application per year. Fall regrowth: Do not apply if last fall cutting is greater than 6", Spring regrowth: Do not apply if last cutting is greater than 2". After the crop is dormant, apply to well-established stands that are at least 1-year old. Yield of first cutting may be reduced because alfalfa foliage present at the time of application will be burned. Cut or harvest after 42 days of application. For improved and longer-lasting weed control, tank mix with metribuzin (Lexone or Sencor). Refer to metribuzin label for Directions for Use.

Do not cut or harvest within 70 days of application. If alfalfa foliage present at time of application will be killed, burned.

Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Additional Precautions, Restrictions and Directions
ALFALFA Dormant season Tank Mix with Velpar® L- Herbicide Region A – See table at end of Alfalfa section	Weeds including chickweed, downy brome and tansymustard.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 10 gals.	<ul style="list-style-type: none"> Do not make more than 2 applications per year. When weeds are less than 4 inches tall apply at 0.7 pt. rate PARAQUAT SL HERBICIDE™ Mix PARAQUAT SL HERBICIDE™ with 1-2 qts. of Velpar L per acre. Use lower rate of Velpar L on loamy sands or sandy loams. Read Directions for use on Velpar L label. During the dormant season, make one application to established alfalfa stands. Fall regrowth: Do not apply if last fall cutting is greater than 6", Spring regrowth: Do not apply if last cutting is greater than 2". Do not apply to alfalfa during the first season after seeding. Temporary chlorosis may occur on alfalfa regrowth. Crop injury may occur if stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury. DO NOT USE on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result. Do not cut or harvest within 42 days of application.
Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Additional Precautions, Restrictions and Directions
ALFALFA Dormant Season	Including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals	<ul style="list-style-type: none"> Do not make more than one application per year. Applications should be made before first spring cutting and during late fall or winter months after the last fall cutting. California: Do not apply if spring regrowth after grazing or cutting is more than 2 inches in Orange and Riverside counties, and all counties north of these counties. All other areas within Region B: Do not apply if regrowth after grazing or cutting is more than 2 inches. Do not harvest within 60 days of application. Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. If there is a severe weed infestation, total hay yield of first cutting may be reduced in alfalfa fields and the reduction is typically directly proportionate to the loss of weed weight. For improved and residual weed control in dormant established (at least 1-year-old) alfalfa, tank mix with metribuzin (Lexone or Sencor) Refer to metribuzin label for Directions for Use. Do not apply tank mix with metribuzin on alfalfa that is less than 1-year-old.
On fall-seeded newly established stands less than 1- year-old: Region A – See table at end of Alfalfa section	California: Desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals	<ul style="list-style-type: none"> California If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.
On fall-seeded newly established stands less than 1- year-old: Region B – See table at end of Alfalfa section		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	

green
alfalfa
foliage
present at
time of app
will be bare

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Additional Precautions, Restrictions and Directions
ALFALFA (East of the Rocky Mountains) Between-cuttings treatment in established plantings. (Includes first year alfalfa)	Broadcast	0.7 pt.	Ground: 10 gals.	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Control of weeds beyond the seedling state and weed stubble is reduced with weeds beyond the seedling stage and the stubble of weeds cut off during harvest. Make applications immediately after alfalfa has been removed for hay or silage. Do not treat more than 5 days after cutting. Yields may be reduced in first year alfalfa stands if alfalfa regrows more than 2 inches. Burning of alfalfa foliage will occur at time of application. Weed control may be reduced where moisture is limited such as in arid climates. Do not cut or harvest within 30 days of application. Apply as needed up to three times during the growing season in addition to a dormant application. Do not make more than 2 applications during the first growing season of first-year alfalfa.
ALFALFA (For use only in the following states: ID, MT, NV, OR, UT, WA, WY) Desiccation of alfalfa to aid harvesting alfalfa seed	Broadcast	1.7-2.7 pts.	Ground: 20-25 gals. Air: 5-10 gals.	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Harvest at least 4 days after application. <i>Do not harvest until at least 4 days after app.</i> Do not apply when weather conditions favor drift from treated areas. Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds. Use only on fields in production of alfalfa seed. <i>Do not use on fields producing alfalfa for livestock feed. Do not use any portion of the treated field for human or animal feed, including seed, seed screenings, hay forage, or stubble.</i> Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops. Do not use treated alfalfa seed for sprouting. Tag All alfalfa seed treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix at processing plants with "NOT FOR HUMAN CONSUMPTION". The grower is responsible for notifying the processing plants of any seed crop treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix. Remove ALL PARAQUAT SL HERBICIDE™ /Reglone treated alfalfa seed screenings from the market because all screening from alfalfa seed processing are prohibited from feed channels.
PARAQUAT SL HERBICIDE™ /Reglone Tank Mix	Broadcast	1.3-2.7 pts. PARAQUAT SL HERBICIDE™ / 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.	<ul style="list-style-type: none"> Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops. Do not use treated alfalfa seed for sprouting. Tag All alfalfa seed treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix at processing plants with "NOT FOR HUMAN CONSUMPTION". The grower is responsible for notifying the processing plants of any seed crop treated with PARAQUAT SL HERBICIDE™ /Reglone tank mix. Remove ALL PARAQUAT SL HERBICIDE™ /Reglone treated alfalfa seed screenings from the market because all screening from alfalfa seed processing are prohibited from feed channels.

ALFALFA : New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only).		
For Control of:	Rate/Acre*	
	For Suppression	For Control
Annual Bluegrass	—	10.7-21.3 fl. oz.
Chickweed	—	10.7-21.3 fl. oz.
Fiddleneck (6 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.
Red Maids (6 inches tall or less)	—	10.7-21.3 fl. oz.
Shepherdspurse	10.7-21.3 fl. oz.	—
Spikeweed (4 inches tall or less)	5.4 fl. oz.	10.7-16.0 fl. oz.
Volunteer Small Grain (8 inches tall or less)	5.4-10.7 fl. oz.	21.3 fl. oz.

*Use the 5.4 fl. oz. rate only when alfalfa has at least 3 trifoliate leaves; use the 10.7 fl. oz. rate only when alfalfa has 6 trifoliate leaves; or use rates over 10.7 oz. only when there are 9 trifoliate leaves.

Alfalfa – Regions

REGION A
Alaska ✓ California: Counties of Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumas, Sierra, Nevada. ✓ Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming. ✓

REGION B
Alabama ✓ Arizona ✓ Arkansas ✓ California: All other counties not listed in Region A. Florida ✓ Georgia ✓ Hawaii ✓ Louisiana ✓ Mississippi ✓ New Mexico ✓ North Carolina ✓ Oklahoma ✓ South Carolina ✓ Tennessee ✓ Texas ✓

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ALMONDS	Directed Spray	0.8-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Avoid allowing spray to contact green stems (except suckers) or foliage. When spraying around young trees, use a shield or wrap plant. Do not graze treated areas and do not feed cover crops grown in treated areas to livestock. Do not apply when nuts to be harvested are on the ground. Retreatment or spot treatments may be necessary for mature woody weeds, perennial weeds, late germinating weeds and green suckers.
ARTICHOKE (GLOBE)	Directed Spray	1.7-2.7 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed 8 pts. per season. Apply at least 7 days apart. Applications must be at least 7 days apart. Harvest 24 hours after last application.
ASPARAGUS	Preplant or Preemergence Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Application should be made prior to emergence of the crop. Emerged asparagus at time of application will be killed.
ASPARAGUS Preemergence to established plantings at least 2 years old.	Broadcast or Banded Over- Row	1.7-2.7 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Application should be made prior to emergence of the crop. or after last harvest Emerged asparagus at time of application will be killed.

ok

Applications must be at least 7 days apart

do not harvest

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
BEANS, DRY <i>Not for use in California</i> Sweet lupin White sweet lupin White lupin Grain lupin Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Moth beans Mung beans Navy beans Pinto beans Rice beans Tepary beans Urd beans Guar <i>Lima beans</i> PEAS, DRY Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas Catjang	Harvest-Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic spreader nonionic at 1 qt/100 gals. of spray mix. Use a single application <i>of the higher rate</i> for vining type beans or bush type with lush growth. May also be applied as a split application and may improve vine coverage. However do not make more than 2 apps per year or exceed a total of 1.3 pts/A. Apply when at least 80% of the pods are yellowing and mostly ripe and when leaves are no more than 40% of bush type peas or beans or 30% of vine type peas or beans are green. DO NOT apply when weather conditions favor spray drift. To reduce drift, a drift control agent may be included. Not registered for use on dry beans or ^{dry} peas in California.
BERRIES Blackberries Blueberries Currant Elderberry Gooseberry Huckleberry Loganberry Raspberries <i>boysen berries</i>	Postemergence Directed Spray	1.3-2.7 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. New canes or shoots can be injured. Therefore, apply before their emergence. To prevent crop injury from spray mist, apply as a coarse spray.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CACAO	Directed Spray	1.3-2.7 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> Do not make more than 5 applications per year. Apply when weeds are succulent and growth is from 1-6". Retreatment or spot treatments may be necessary for mature woody weeds, late-germinating weeds and grasses and for perennials. To prevent injury use a shield for young trees to prevent sprays from contacting cacao plants. Do not spray under windy conditions. Do not graze treated areas or feed treated cover crops to livestock.
CASSAVAS, TANIERS & YAMS (Puerto Rico only)	Shielded Post Directed Spray	1.3 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> Cassavas and Taniers: Do not make more than 3 applications per year. Yams: Do not make more than 2 applications per year. Make applications when weeds are succulent and growth is 1-6". Prevent injury to crop by preventing spray from contacting crop. Do not spray under windy conditions. Do not graze treated areas or feed treated forage to livestock.

new
do not allow spray to contact cacao plants, as injury may result. Use a shield for young trees.

General Information for Chemical Fallow

- As the density of stubble, crop residue or weeds increases, use higher spray volumes for better coverage.
- To control volunteer wheat or downy brome, fall-applied treatments generally work best with PARAQUAT SL HERBICIDE™. If possible, tank mix with Atrazine for maximum burndown and residual control.
- Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.
- Before applying PARAQUAT SL HERBICIDE™, cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest.
- The addition of dicamba (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds. Read the label for 2,4-D ester (Low Volatile), Banvel, or residual herbicide label(s) for Directions for Use and further restrictions. *those*
- It is permissible to tank mix with registered residual herbicide combination other than listed for extended weed control during the fallow period.
- Weeds and grasses emerging after application and weeds taller than 6 inches will not be controlled.
- Crop plants emerged at the time of application will be killed.
- Apply 5-60 gallons spray mix per acre by ground application. When applying at <10 GPA by ground:
 - Do not apply with floaters or exceed a speed of 10 mph.
 - Apply with flat fan nozzles at 30-40 psi.
 - Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./acre.
 - By air: apply in 5-10 gals. of spray mix per acre.

at Minimum total spray per acre allowed is 5 gals for ground + 5 gals for air application.

pH column?

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Additional Precautions, Restrictions and Directions
CHEMICAL FALLOW Continuous Wheat 2-3 Month Recropping Interval	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.7 pts. <u>2</u> Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than 3 applications per year Apply at least 45 days before seeding. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide (Refer to "General information" section).
CHEMICAL FALLOW Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12/13 months later) 14	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. <u>Weeds 6": 2.2.7 pts</u> <u>2-2.7 pts</u>	Ground: 5 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Spray before weeds produce seeds. Control of volunteer wheat and downy brome control are increase when applications are made late August or early September. For improved burndown and residual control of weeds, tank mix with Atrazine, Marksman® Herbicide, or Command® Herbicide. For improved burndown and residual control of grass and broadleaf weed tank mix with metribuzin (Sencor 75DF). Read the product labels for Directions for use.
CHEMICAL FALLOW Wheat-Fallow-Wheat Rotations (Spring applied: seeded 3-5 months later)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. <u>Weeds 6": 2.2.7 pts</u> <u>2-2.7</u>	Ground: 5 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To conserve moisture, application should be made March 1 to April 15, prior to spring rains. Even though moisture loss is greater when applications are made after the boot stage, volunteer wheat is easier to control after this stage. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide (Refer to "General information" section). For control of grass and broadleaf weeds, tank mix with metribuzin, (Sencor 75DF/Lexone). Read the metribuzin (Sencor 75DF/Lexone) label for Directions for use.
CHEMICAL FALLOW Wheat-Annual Crop ¹ -Wheat Rotations (fall applied in wheat stubble)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For improved burndown and residual weed control, tank mix with Atrazine or Marksman. Read the labels' Directions for use. Make applications after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before seed production. Applications made late August to November help control volunteer wheat and downy brome.
CHEMICAL FALLOW Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop ¹)	Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. <u>Weeds 6": 2.2.7 pts</u> <u>2-2.7</u>	Ground: 5 gals. Air: 5 gals.	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For enhanced burndown and residual weed control, tank mix with Atrazine. Read the labels for Directions for use. For volunteer wheat or downy brome control in spring, use at least 1.3 pts. Of PARAQUAT SL HERBICIDE™ per acre with a Photosynthetic Inhibitor Herbicide (Refer to "General information" section). Refer to the Atrazine label for recommendations pertaining to soil pH and recropping intervals.

¹Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.

refer to general info section

additional restrictions

additional restrictions

refer to general info section

of tank mix w/ atrazine for enhanced burndown and residual weed control. Refer to the labels for directions.

also improve burndown

Crop	Weeds	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
CLOVER AND OTHER LEGUMES Including velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.	For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.					<ul style="list-style-type: none"> Do not make more than 1 application per year. Applications should be made during late fall or winter months after the last cutting and before first spring cutting. Applications must not be made if regrowth after grazing or cutting is more than 3" ^{2"} Do not harvest within 60 days of application. CAUTION: Stand and/or yield reductions may occur when applications are made to clover or other legumes that are not dormant, or have broken dormancy. Therefore, it may be necessary to replant. Burning will occur to green clover or other legumes' foliage present at the time of application. Discoloration and temporary stunting will occur in clover or other legumes foliage present at the time of application. If there is severe weed infestation, the total hay yield of first cutting may be reduced in clover or other legumes fields and is usually directly proportionate to the loss of weed weight.
Dormant Season						
On established plantings: Region A - See table at end of Alfalfa section.	California • Use for desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.	Broadcast	1.3-2.1 pts.	Ground: 10 gals. Air: 5 gals.	60	
On established plantings: Region B - See table at end of Alfalfa section.	• If ryegrass, shepherdspurse, sowthistle or groundsel are present, use high rate.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
On fall-seeded, newly established stands less than 1-year-old: Region A - See table at end of Alfalfa section.		Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	60	
On fall-seeded, newly established stands less than 1-year-old: Region B - See table at end of Alfalfa section.		Broadcast	0.5-0.8 pts.	Ground: 10 gals. Air: 5 gals.	60	

Do not apply

Cal:
if ryegrass...
use high rate.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions																						
CORN FIELD CORN POPCORN SWEET CORN SEED CORN (Used alone)	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none">Do not make more than 3 applications per year.Includes field, fresh sweet, forage, fodder and popcorn.To permit maximum weed and grass emergence, seedbeds should be formed as far ahead of planting and treatment as possible.Seeding should be done with a minimum amount of soil disturbance.Control will not occur when applications are made after weeds and grasses have emerged. However, crop plants emerged at time of application will be killed.																						
CORN Tank Mixes for No-till/Reduced Till	Preplant or Preemergence Broadcast or Banded Over Row	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.*	—	<ul style="list-style-type: none">Do not make more than 3 applications per year.Applications should be made as broadcast sprays before, during or after planting, but before crop emergence.PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control:; <table><tr><td>2,4-D Ester (Low Volatile)</td><td>Harness®</td></tr><tr><td>AAtrex/Atrazine</td><td>Harness® Xtra</td></tr><tr><td>Banvel</td><td>Lasso® Herbicide</td></tr><tr><td>Bicep MAGNUM</td><td>Linex</td></tr><tr><td>Bicep Lite II</td><td>Lorox</td></tr><tr><td>MAGNUM</td><td>Princep</td></tr><tr><td>Dual MAGNUM</td><td>Prowl® Herbicide</td></tr><tr><td>Frontier®</td><td>Simazine®</td></tr><tr><td>Guardsman®</td><td>Surpass® EC</td></tr><tr><td>Harmony® Extra</td><td>Surpass® 100</td></tr><tr><td>Herbicide</td><td>Topnotch®</td></tr></table>(Preplant only)PARAQUAT SL HERBICIDE™ may also be tank mixed with Ambush® insecticide.*Read respective product label(s) for Directions for Use and if these products can be applied by air.	2,4-D Ester (Low Volatile)	Harness®	AAtrex/Atrazine	Harness® Xtra	Banvel	Lasso® Herbicide	Bicep MAGNUM	Linex	Bicep Lite II	Lorox	MAGNUM	Princep	Dual MAGNUM	Prowl® Herbicide	Frontier®	Simazine®	Guardsman®	Surpass® EC	Harmony® Extra	Surpass® 100	Herbicide	Topnotch®
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Herbicide	Topnotch®																										

Further restrictions

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SWEET CORN, SEED CORN	Postemergence Directed Spray (including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Applications should be made when weeds are actively growing. Use a higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts corn plants <p>For Hooded Or Shielded Sprayers:</p> <ul style="list-style-type: none"> Use a hooded or shielded sprayer with skids or wheel on the spray boom to maintain spray height in order to prevent excessive crop phytotoxicity. Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. <p>For Directed Spray Without Hooded Or Shielded Sprayers.</p> <p><i>Corn height is measure from soil surface to top of whorl.</i></p> <ul style="list-style-type: none"> Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks. Corn plants shorter than 10" may be injured and not recover. For corn more than 20" tall: Arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks. Injury to corn foliage sprayed occur. However, corn will recover and develop normally.

Injury to corn foliage ~~that~~ will occur if sprayed.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
FIELD CORN, POPCORN, SEED CORN	Harvest Aid Broadcast	0.8-1.3 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than one application per year. Make ONE (1) application at least 7 days prior to harvest. Apply after the corn is mature. This is indicated by a black layer which forms at the base of the kernels. You may consult your local agricultural authority for help in identifying the black layer. Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v. To desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18" use 1.5 pts. <u>1.3 pts</u> Drought stressed plants, especially broadleaf weeds, can be difficult to kill and desiccation may not be complete.
FIELD CORN ONLY (grain, fodder, forage)	Postemergence Directed Spray USDA Witchweed Eradication Program	1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. If regrowth occurs, initiate sprays in late June to early July and repeat in early August. Follow application instructions in post-emergence directed spray section above.
FIELD CORN ONLY (grain, fodder, forage) 2,4-D Amine AE Tank Mix	Postemergence Directed Spray USDA Witchweed Eradication Program	5.4 fl. oz. +0.5 lb. 2,4-D Amine AE	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as directed spray onto grassy weeds and witchweed before witchweed blooms. If regrowth occurs, reapply. Follow application instructions in post-emergence directed spray section above.
COTTON (Used alone)	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply prior to, during or after planting, but before crop emergence. For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment. Seeding should be done with a minimum of soil disturbance.
COTTON (California only; Used alone)	Preplant	5.4-10.7 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

error on Syngenta label.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Goal® Herbicide Tank Mix	Preplant or Fallow Bed Broadcast	1.7-2.7 pts.	Ground: Or Air: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For specific use directions and restrictions, and weeds controlled refer to Goal® label.
COTTON Other Tank Mixes	Preplant or Preemergence	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. For improved residual control or burndown PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: <ul style="list-style-type: none"> Caparo® Herbicide Cotoran® Herbicide Cotton-Pro® Herbicide Diurone® Dual MAGNUM Harmony Extra (Preplant Only) Meturon® Herbicide MSMA Prowl Zorial® Herbicide See Order of Tank Mixing section and follow mixing instructions carefully. Maintain constant agitation when tank mixing with Cotoran DF® or Meturon DF®. When tank mixing with any of the herbicides listed above, refer to that product's label for a list of weeds controlled and for specific directions and restrictions.

COTTON Harvest Aid Use ~~Precautions~~ Restrictions

- Do not make more than 4 applications per year. (~~Applies to all sections~~)
- Do not pasture livestock in treated fields or feed treated foliage.
- Do not apply to cotton within 3 days before harvest.
- Repeat application if necessary. Do not exceed a total of 1.3 pts./A as a harvest aid.
- May be tank mixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations, and cautions.
- PARAQUAT SL HERBICIDE™ can be applied in a tank mix with methyl parathion and/or Karate® insecticide.
- Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOUTHERN COTTON Harvest aid for bolls opening and defoliation (Tank mix with phosphate and chlorate defoliants).	Broadcast	5.4 fl. oz. + 1 pt. Phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Development of immature bolls will be inhibited. Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.
SOUTHERN COTTON Additional tank mixes for boll opening and defoliation	Broadcast	2.1-3.3 oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 4 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with the following products to aid in defoliation and opening of mature bolls. Accelerate® Defoliant Def® Defoliant Dropp® Defoliant Ethephon® Plant Growth Regulator Folex® Defoliant Harvade® Harvest Growth Regulator Prep™ PGR Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. For rate, directions, limitations and cautions refer to tank mix product label.
SOUTHERN COTTON Post Defoliation – To aid in opening of mature bolls and to desiccate green weeds.	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. If weed infestation is heavy or dense use higher rate. Apply when 75% or more of bolls are open and remaining bolls to be harvested are mature. Development of immature bolls will be inhibited. After a defoliation or conditioning application has been made, delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking.
WESTERN COTTON Harvest aid for boll opening and early defoliation	Broadcast	3.7-5.4 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 4 applications per year. On rank cotton, use higher rate. Do not use more than 5.4 fl. oz of PARAQUAT SL HERBICIDE™ for early defoliation as excessive desiccation may occur. Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB). Development of immature bolls will be inhibited. Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
WESTERN COTTON Harvest aid for boll opening and mid-to-late defoliation	Broadcast	5.4-10.7 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliation and/or other compatible harvest aid products.		3 (Alone)	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use the 10.7 fl. oz. rate of PARAQUAT SL HERBICIDE™ in desert cotton areas or on rank vigorous cotton. Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB). Development of immature bolls will be inhibited.
COTTON Stripper or Spindle Harvested Harvest aid for defoliation and boll opening.	Broadcast	2.1-7.5 fl. oz.	Ground: 10 gals. Air: 5 gals.	3.	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature. DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED, SLICE BOLLS AND INSPECT THE SEED FOR MATURITY. PARAQUAT SL HERBICIDE™ may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant® Def Defoliant® Dropp Defoliant® Ethephone Plant Growth Regulator® Folex Defoliant® Harvade Harvest Growth Regulator® Prep PGR® May be applied as a split application. Do not exceed a total of 1.3 pts./A. To avoid leaf sticking, apply PARAQUAT SL HERBICIDE™ as a desiccant approximately 3-7 days after defoliant or a conditioning application and 7-14 days before harvest. Cooler temperatures may cause a longer waiting period between application of PARAQUAT SL HERBICIDE™ as a desiccant and defoliation/conditioner. South of Interstate-10 in Texas where temperatures are typically higher during defoliation lower rates in the range may be necessary.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
COTTON Late season desiccation	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, IT IS ADVISABLE TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS. May be applied as a split application. Do not exceed a total of 1.3 pts./A. Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB). Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity. South of Interstate-10 in Texas, where temperatures are typically higher during defoliation, lower rates in the range may be necessary. Delay desiccation application of PARAQUAT SL HERBICIDE™ approximately 3-7 days to minimize leaf sticking if a defoliation or conditioning application has been made. May be tank mixed with other harvest aid materials known to the local expert to be effective.
COTTON Desiccation of Regrowth	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Use to desiccate regrowth occurring after defoliation or desiccation. Because regrowth is difficult to control, thorough coverage with the full recommended rate is necessary. Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete. If regrowth is excessive use higher rate.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
EASTER LILIES (Field grown)	Preemergence	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not exceed two applications per year.
FALLOW LAND Prior to planting of any crops.	Preplant Broadcast to Fallow Land	1.0-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes. Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges. For weeds approaching the maximum size of 6" the higher rate may be used. No more than 2 applications should be made during the fallow period. Prior to application allow maximum weed emergence to maximize the benefit of this use. Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.
GRASSES (For Seed) (For Use in Seedbed Preparation)	Preplant, At Planting, or Preemergence	1.3-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Prepare the seedbeds and allow weeds to germinate. Apply PARAQUAT SL HERBICIDE™ when weeds are at the 3-5 leaf stage. Applications may be repeated as necessary prior to grass emergence. <i>(up to 3 applications per year)</i> Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.
GUAR (Preharvest desiccation)	Preharvest	1.3 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply after the pods are fully mature. Do not graze treated areas or use the treated forage for animal feed.
GUAVA	Directed Spray	2.5 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 4 applications per year. Do not allow spray to contact green stems, fruit or foliage. Do not graze treated areas. Do not feed cover crops grown in treated areas to livestock. Retreatment or spot spraying may be necessary for mature woody weeds, late-germinating weeds and grasses, and perennials.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
HOPS (ID, OR, & WA only)	Directed Spray and/or Suckering and Stripping.	1.3 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Retreatment of spot treatment may be necessary. Do not apply more than 3 times per season. Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result. Do not allow animals to graze in treated hopyards. Silage and hop vine refuse may be fed to livestock. Spray only the basal 2 ft. of the vines for suckering and stripping. Repeat as necessary, <i>up to 3 times per season</i>. Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using PARAQUAT SL HERBICIDE™ on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs. Chemical Pruning: Spray when vines are less than 3 ft. tall to burn back existing vines and obtain even emergence or subsequent vines. APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.
LENTILS NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.	Harvest Aid	0.8-1.3 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume. May also be applied as a split application. DO NOT make more than 2 applications or exceed a total of 1.3 pts./A. The split application may improve coverage. Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color. DO NOT apply when weather conditions favor spray drift. To reduce spray drift a drift control agent may be included.
MINT (Peppermint, Spearmint)	Dormant Season:	1.3-2.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For suppression of weeds such as, groundsel, chickweed, downy brome, bluegrass, Italian ryegrass, prickly lettuce. Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall. Do not apply more than 2.0 pts./A per dormant season. May be tank mixed with Sinbar® Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Refer to the Sinbar label for a list of weeds controlled and for rates, directions, and cautions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
ONIONS (seeded) AND GARLIC	Preplant/ Preemergence	1.7-2.7 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> Do not make more than 1 application per year. For heavy weed infestations or wild oat control use the higher rate. Apply only one application per season at the 2.7 pts./A dosage. Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence. Apply a maximum of 2.7 pts./A per season.
PASSION FRUIT	Directed Spray	2.5 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 5 applications per year. If bark is still green at application time, use a shield or wrap vine. Pick all fruit off the ground prior to application if application is to be made during harvest season. Do not allow animals to graze on treated areas. It may be necessary to retreat or spot treat.
PEANUTS	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack. For at ground crack use, PARAQUAT SL HERBICIDE™ can be tank mixed with Pursuit® Herbicide or Dual MAGNUM for residual weed control. Consult the Pursuit or Dual MAGNUM label for a list of weeds controlled, application rates, necessary precautions, and use limitations. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Do not apply by air.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PEANUTS Basagran® Herbicide Tank Mix	Broadcast At Ground Crack Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Tank mix PARAQUAT SL HERBICIDE™ with Basagran at 1 pt./A. for improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida. This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack. Make no more than 2 applications per season and do not apply a total of more than 10.8 fl. oz. of product per acre per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Refer to the Basagran label for a list of weeds controlled, specific use directions, limitations, cautions. If peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment do not apply this tank mix as injury may be enhanced and/or prolonged. During prolonged periods of drought or unseasonably cold weather do not apply this tank mix as unsatisfactory weed control may result. Do not apply by air.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PEANUTS Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	Broadcast Postemergence	5.4-10.8 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix PARAQUAT SL HERBICIDE™ with 8-16 oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200. Do not apply a total of more than 10.8 fl. oz. of product per season and make no more than 2 applications per season. Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally. Refer to the complete Butyrac or Butoxone 200 label for specific application rates, use directions, limitations, and necessary precautions and for a list of weeds controlled. Do not apply by air.
PIGEON PEAS (Puerto Rico only)	Directed Spray	1.3 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> Do not make more than 1 application per year. Avoid contact with pigeon pea foliage. Do not make more than 1 application per season. Do not graze treated areas or feed treated forage to livestock. Cannery waste can be fed to livestock.
PINEAPPLE	Directed Spray	1.3-2.7 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> More mature weeds may require retreatment. Do not exceed 3 applications per season.
POTATO	Preplant or Preemergence Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply up to ground cracking stage, before potatoes have emerged.
POTATO (California, Washington, Oregon, Idaho only; used alone)	Preplant Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
POTATO Fresh Market Only Preharvest vine killing and weed desiccation. For Use Only in the states of: Colorado, Delaware, Idaho, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Utah, Washington, Wisconsin and Wyoming	Broadcast	0.7-1.3 pts.	Ground: 20 gals.	3	For Fresh Market Potatoes Only. (Fresh Market Potatoes include potatoes that are sent directly from the field to a consumer, grocery store, or processor for use.) <ul style="list-style-type: none"> Do not make more than 2 applications per year. DO NOT use on potatoes that will be stored as tuber decomposition may result. Potatoes must be harvested promptly after desiccation and processed or consumed immediately. DO NOT apply to drought stressed potato vines. DO NOT use to desiccate the vines of seed potatoes as seed pieces may fail to germinate and grow normally. DO NOT pasture livestock in treated potato fields. DO NOT exceed 2.7 pts./A per season. Begin application when leaves begin to turn yellow. Immature potato foliage is tolerant to PARAQUAT SL HERBICIDE™. However, desiccation will not be complete under this condition. Use 1.3 pts./A rate where quick vine kill is desired. For dense vine growth, use 2 applications of 0.6 pt/A. Split applications must be applied a minimum of five days apart.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
RICE	Preplant or Preemergence Broadcast	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2.0 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals. <i>10 gals</i>	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply as a broadcast spray before, during or after planting, but before crop emergence. When vegetation is dense, use higher rates and spray volumes. Seeding should be done with a minimum amount of soil disturbance. PARAQUAT SL HERBICIDE™ will not control weeds and grasses emerging after application. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved or extended weed control. Refer to tank mix herbicide labels for specific label rates, use directions, limitations, and necessary precautions and for a list of weeds controlled. Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.
SAFFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during and after planting but before crop emergence.
SAFFLOWER (California only)	Preplant Broadcast	0.7 pt.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control of volunteer barley in preformed seedbeds.
SMALL GRAINS (Barley, wheat)	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year.
SMALL GRAINS (Wheat Only) Hoelon 3EC Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 5 gals. Air: 5 gals. <i>10 gals</i>	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. A tank mix with Hoelon 3EC will improve grass control. Apply when weeds are actively growing and 1-6" in height. Weeds 6 inches or taller may not be controlled. Do not apply this tank mix to barley as crop injury may result.
SORGHUM (Grain)	Preplant/ Preemergence Broadcast or Band	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum weed and grass emergence seedbeds should be formed as far ahead of planting as possible. Seeding should be done with a minimum amount of soil disturbance.

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SORGHUM (Grain) Atrazine & 2,4-D ester [Low Volatile] Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3- 1.7 pts. Weeds 3-6": 1.7- 2 pts. Weeds 6": 2-2.7 pts.		48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may assist in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.
SORGHUM (Grain) Harmony® Extra Herbicide Tank Mix	Preplant	1.3-2.5 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For Improved weed control, PARAQUAT SL HERBICIDE™ may be tank mixed with Harmony Extra. Refer to the Harmony Extra label for a list of weeds controlled, application rates, directions, limitations, and necessary precautions.
SORGHUM (Grain)	Postemergence Directed (Including Hooded or Shielded)	0.7-1.3 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when weeds are actively growing. Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray contacts sorghum plants. Do not exceed 2 postemergence-directed applications or exceed a total of 5.3 pts. PARAQUAT SL HERBICIDE™ per season. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height. Apply by directing spray between the rows and by using hooded or shielded sprayers to prevent spray contact with crop plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply when sorghum is at least 12" tall when naturally standing. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray. Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Do not exceed a total of 4.0 pts. Of PARAQUAT SL HERBICIDE™ per season. Apply as a broadcast spray before, during or after planting, but before crop emergence. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides for improved burndown or residual control: <div> <div>2,4-DB</div> <div>Lorox</div> <div>Canopy</div> <div>Lorox Plus</div> <div>Dual MAGNUM</div> <div>Prowl</div> <div>Goal</div> <div>Pursuit Herbicide</div> <div>Harmony Extra</div> <div>Scepter Herbicide</div> <div>{Preplant Only}</div> <div>Sencor Herbicide</div> <div>Lasso</div> <div>Surflan® Herbicide</div> <div>Lexone</div> <div>Turbo Herbicide</div> <div>Linex</div> </div> The rate of PARAQUAT SL HERBICIDE™ to be used in these tank mixtures is dependent on weed height and growing conditions. Where weed canopy is dense or under dry conditions use the highest recommended rate of PARAQUAT SL HERBICIDE™. Refer to the specific tank mix herbicide label(s) for application rates, directions, limitations, necessary precautions and for a list of weeds controlled. The lower application rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting. Seeding should be done with a minimum amount of soil disturbance. Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).
SOYBEANS 2,4-D ester (Low Volatile) Tank Mix	Preplant or Preemergence	Weeds 1-3": 1.3-1.7 pts. Weeds 3-6": 1.7-2 pts. Weeds 6": 2-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting. Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting. Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not able to accept the results of soybean injury including possible loss of stand and yield. Do not use amine formulation as PARAQUAT SL HERBICIDE™ activity may be reduced. May be tank mixed with residual herbicides listed above. Refer to the 2,4-D ester (Low Volatile) label for a list of weeds controlled, application rates, directions, limitations and necessary precautions.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Postemergence Directed Spray (Includes Hooded or Shielded)	3.0-5.3 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply when weeds are actively growing. Use the lower rate of PARAQUAT SL HERBICIDE™ for control of seeding johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2" tall For control of 2-4" red rice, <i>Brachiaria</i>, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and Use 5.3 fl. oz. of PARAQUAT SL HERBICIDE™ for control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, Apply PARAQUAT SL HERBICIDE™ at 5.3 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-D formulation for control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice. Refer to the 2,4-D label for directions, limitations, and cautions. Do not graze or harvest for forage or hay. If necessary, make a second and final application 7-13 days later. <p>HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants. Use higher rate on larger (<6") on hard to control weeds. Weeds 6" or taller may not be controlled. Severe damage and/or complete kill can occur if spray intentionally or accidentally including drift of fine droplets) contacts the plants. <p>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</p> <ul style="list-style-type: none"> Do not treat on soybeans that are less than 8" tall. Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift. Some crop injury will occur. The degree of injury is dependent upon the precision of application and spraying conditions.

missing

7-14

11 fall panicum, use
5.3 fl oz of Paraquat SL. 11

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SOYBEANS	Harvest Aid	5.4-10.7 fl. oz.	Ground: 20 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Indeterminant varieties: Applications should be made when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, ½ of leaves have dropped, and remaining leaves are yellowing. Injury will occur on immature soybeans. Mature cocklebur, especially drought-stressed plants, are tolerant to PARAQUAT SL HERBICIDE™ and desiccation will not be complete. Always use the higher rate when treating cocklebur. Do not apply within 15 days of harvest. Do not graze or harvest for forage or hay.
STRAWBERRIES	Postemergence Directed Spray	1.3 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Direct spray between the rows, using shields to prevent spray contact with crop plants. Do not allow spray to contact strawberry plants as injury or excessive residues may result. Do not apply more than 3 times per season. Do not graze livestock in treated areas.
SUGAR BEETS	Preplant or Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For heavier weed infestations use the higher label rate. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. Can be used in fallow bed/stale seedbed for weed control. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
SUGARCANE	Postemergence Directed Spray (includes Hooded or Shielded)				General Comments <ul style="list-style-type: none"> Do not make more than 2 applications per year, except in Florida & Texas in which the max is 7. Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction. If necessary, a second and final application can be made when new weed growth is 2-6" high. Do not graze treated areas or feed treated forage to livestock.
-Florida-		1.3 pts.	Ground: 50 gals.	-	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Optimum results can be obtained by applying in early spring (March-April) when weeds are small. Do not apply after June 1 as cane growth may be stunted and yields reduced.
-Hawaii-		1.3 pts.	Ground: 20 gals.	-	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not apply after cane rows have closed in.
-Louisiana-		0.7-2.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For tiller control, apply when tillers are less than 18" high. For heavier weed infestations or tiller growth use the higher rate.
-Florida & Texas-	Harvest Aid	0.4-0.7 pts.	Air: 5 gals.	-	<ul style="list-style-type: none"> Do not make more than 1 application per year. Under cool, cloudy weather conditions use higher rate. Apply 3-14 days before burning and harvest.
SUNFLOWER	Preplant or Preemergence Broadcast or Banded Over Row	1.7 (2.7) pts. 2.7	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Apply before, during, or after planting but before crop emergence.
SUNFLOWER	Preharvest Desiccation Broadcast	0.8-1.3 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this is equivalent to the time when the back of the heads are yellow and the bracts are turning brown. Do not graze treated areas or feed treated forage to livestock. When crop stands or weed infestations are heavy, use the higher label rate.
TARO, DRYLAND (Hawaii Only)	Postemergence Directed Spray	1.3-2.1 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not allow spray to contact the taro plants as injury may result. Make the first application when weed growth is 1-4" high. Weeds emerging after the application will not be controlled. A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.
TREE PLANTATION ESTABLISH-MENT Deciduous and Conifers	Preplant Broadcast	1.3-2.7 pts.	Ground: 20 gals.	-	<ul style="list-style-type: none"> Do not make more than 3 applications per year. To allow maximum emergence of weeds, prepare ground early. Apply prior to planting. Plant with minimal soil disturbance. For heavier weed infestations, use the higher application rate. For improved burndown or residual control, tank mix PARAQUAT SL HERBICIDE™ with other herbicides labeled for this use. Refer to the specific tank mix herbicide label(s) for application rates, directions, limitations, necessary precautions, and for a list of weeds controlled. Do not apply in less than 20 gals./A as weed control will be reduced.

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Orchards, Vineyards, Windbreak, Shade & Ornamental Trees: Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pistachios Plums Prunes Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arbovitae, ash, elm, fir, oak, pine, etc.	Directed Spray	1.7- 2.7 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. Do not allow spray to make contact with green stems (except suckers), fruit or foliage. Use the shield or wrap plant when spraying around young trees or vines. Do not graze treated areas. Do not feed covered crops grown in treated areas to livestock. Do not apply when figs, nuts or olives to be harvested are on the ground. For apricots – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For cherries – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For figs – Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season. For grapes – treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage. For kiwi fruit – Do not treat more than 3 times per year. For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary. For nectarines – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. For olives – Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season. For pistachios – Do not exceed 2 applications after shells split. For plums – Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season. <p>for peaches: do not harvest within 14 days after application + do not exceed 3 post emergence directed applications per season.</p>

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
TREES AND VINES Tank Mixes	Directed Spray	1.7-2.7 pts.	Ground: 10 gals.	Refer to other TM labels	<ul style="list-style-type: none"> Do not make more than 5 applications per year, except for: Apricots, Cherries, Kiwi Fruit, Nectarines, Peaches, Plums, no more than 3 applications per year; Olives, no more than 4 applications and Pistachios, no more than 5 applications but only 2 applications after shells split. PARAQUAT SL HERBICIDE™ may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for necessary precautions, limitations, label restrictions, application rates, directions for use, and weeds controlled. PARAQUAT SL HERBICIDE™ may be tank mixed with the following herbicides: Devrinol® Herbicide Goal® Karmex® Krovar® Herbicides Princep® Sinbar® Solicam® Herbicide Surflan®
TYFON (New Hampshire only)	Preplant Preemergence	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seeding should be done with a minimum of soil disturbance. Weeds and grasses emerging after treatment will not be controlled. Crop plants emerged at time of application will be injured.
VEGETABLES (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese <i>or</i> Waxgourd Citron Melon Collards Cucumber Eggplant Gherkin Gourd, Edible Groundcherry Lettuce Momordica spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	Preplant Preemergence	1.3-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence. Banded or broadcast treatment applications can be made before, during or after planting but prior to the crop emergence. For heavier weed infestations, use the higher rate for heavier weed infestations. Seeding or transplanting should be done with a minimum amount of soil disturbance. Crop plants emerged at time of application will be killed. PARAQUAT SL HERBICIDE™ can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal®. Consult the Goal® label for a list of weeds controlled, application rates and necessary precautions. Do not harvest tomatoes within 30 days after application.

Endive (Escarole)

repeated

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Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
VEGETABLES Eggplant Tomatoes Peppers	Directed Spray	1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. For control or suppression of emerged weeds between rows after crop establishment. Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure. Do not spray under conditions which may cause excessive drift. Apply when weeds are succulent and weed growth is less than 6". Do not apply more than 3 applications per season. Do not allow animals to graze in treated areas. Do not harvest tomatoes within 30 days after application.
VEGETABLES Tomatoes	After Final Harvest	1.6-2.5 pts.	Ground: 40-120 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Apply in 40-120 gallons of water per acre (0.62-0.93 lb. a.i./A). Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. Spray solution). To ensure maximum herbicide burndown tomato vines should be thoroughly covered. PARAQUAT SL HERBICIDE™ may be deactivated and less efficacious when dirty or muddy water is used. To aid in the removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently. DO NOT apply more than a total of 3 lbs. active ingredient (paraquat) per acre per season. To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	Broadcast	0.4-0.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. For control of volunteer barley in preformed seedbeds. Do not harvest tomatoes within 30 days after application.
VEGETABLES Rhubarb	Dormant	1.7-2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not exceed 2 applications per year. Apply during dormant season before buds in crown begin to grow.

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RESIN SOAKING

Pines including Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines.

Tree Selection – Trees should be selected from stands on sites not subject to stress from periods of extreme drought ~~stress~~ because the desiccating effect of PARAQUAT SL HERBICIDE™ is accentuated during drought, causing a reduction in the amount of oleoresin deposited in the xylem. Vigorous, non-stagnated natural or planted stands should be selected. Plan PARAQUAT SL HERBICIDE™ treatments in stagnated or commercial timber stands, not sooner than three years after a commercial thinning.

Application Directions – To bring the treatment into contact with sapwood (or xylem), apply water-diluted PARAQUAT SL HERBICIDE™ to an appropriate wound in the tree trunk.

Bark Streaks or Cuts: Use a standard or rotary bark hack or a chainsaw shipping tool (used in naval stores work) to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. Do not exceed 1/3 of the circumference of the tree. Serious girdling of the trunk and premature death of the tree can result if multiple streaks or cuts are made. Apply a coarse spray (about 1.7-5.0 ml) PARAQUAT SL HERBICIDE™ solution (1-5% cation, wt./wt. basis) to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak. For example, for a 9-inch diameter tree, using 3 ml of 2 or 4% PARAQUAT SL HERBICIDE™ solution will cover the 1-inch wide streak and will result in application of 60 or 120 mg per streak.

Time of Treatment: Less severe pine beetle infestation and longer tree life usually result during cool season treatments under non-drought season. However, resin soaking can occur from treatments made any time of the year.

Interval between Treatment and Tree Harvest: There should be at least a 6-month interval between application of PARAQUAT SL HERBICIDE™ and tree harvest. However it is preferable the interval is from 12-24 months, even though intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks possibly making early harvest necessary. With this treatment, there is a potential for promoting beetle attack or causing premature death of the tree. At high dosage rates, desiccation of the xylem tissue, rather than the desired resin soaking, may occur.

Note: This type of treatment may reduce stem growth during between treatment and tree harvest.

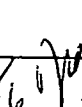

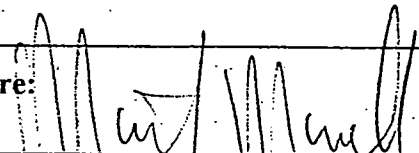
Dilution Table for PARAQUAT SL HERBICIDE™ (3.0 lbs. cation per gallon)	
Concentration of Cation Desired (Wt./Wt. Basis)	Add the Following No. Gal. of Water to $\frac{2}{3}$ Gallon of PARAQUAT SL HERBICIDE™
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
<p><i>Don't type complete words.</i></p> <p>CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs)</p>	Broadcast	1.7-2.7 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> Do not make more than 3 applications per year. PARAQUAT SL HERBICIDE™ may be tank mixed with other herbicides registered for this use for improved emerged weed control or extended weed control. Refer to tank mix herbicide labels for specific directions, including application rates and methods, limitations, necessary precautions, and a list of weeds controlled.
NONCROP USES	Broadcast or Spot Treatment	1.7- 2.7 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Repeat applications as necessary but do not make more than 10 applications per year. To be used in noncrop areas including public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, and fence lines. Keep away from foliage of ornamentals or desired plants.

Avoid contact with the spray

Crop	Use Pattern	PARAQUAT SL HERBICIDE™ Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Additional Precautions, Restrictions and Directions
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	Broadcast	0.7-1.3 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendati on →	<ul style="list-style-type: none"> Do not make more than 3 applications per year. West of Cascade and Sierra Nevada Mountains <ul style="list-style-type: none"> Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth. Apply on moderately to heavily grazed areas for best seeding results. Do not use in heavy sod and weed growth areas. East of Rocky Mountains <ul style="list-style-type: none"> Use the 1.3 pts rate on vigorous or coarse sod species such as brome grass. Apply prior to, or at time of seeding grasses or forage legumes. Apply only to grazed or mowed pastures not more than 3" in height at time of treatment. Bermudagrass or Bahiagrass Sods <ul style="list-style-type: none"> Apply in late summer or early fall to sod not exceeding 3" in height. For control of emerged Little Barley, apply in February or March before the mid-boot stage of Little Barley. Bermudagrass and Coastal Bermudagrass Pastures <ul style="list-style-type: none"> Apply when bermudagrass is dormant. For control of little barley, apply before the mid-boot stage. Do not mow for hay until 40 days after treatment.
For Control of Endophyte- Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	Broadcast (Split Application)	0.7-1.3 pts. followed by 0.7-1.3 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Use split applications of 10-21 days apart if necessary. Do not exceed 2.6 pts./A total in preparation for reseeding. For spring plantings, the initial application of 0.7-1.3 pts. may be made the previous fall. Apply when fescue is actively growing and no more than 4" high. To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.

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Recommendation of Division Directors Negotiated Due Dates		
Decision#: 359653		Registration#: 82557-R
Fee Category: R30		PRIA Decision Time Frame: 3 months
Submitted by: Hope Johnson	Branch: HB	Date: 10/18/05
Company: Sinon USA Inc.		
Original Due Date: November 21, 2005	Proposed New Due Date: January 4, 2006 	
Previous Negotiated Due Dates: n/a		
<p>Issue (describe in detail): The pending application is for a new Paraquat end use product. In the original application, they stated they are a "me-too" with product 100-1074, they cited the Acute Toxicity 6 pack from the technical product they are using (70552-1), submitted their own Product Chemistry Group A data, and cited the Product Chemistry Group B data from the Paraquat RED. The Technical Review Branch found that they were able to cite the 6-pack of acute toxicity studies, however, they could not find that the products were substantially similar from a chemical standpoint because the stench agent in the product was not within the certified limits of the "me-too" product. Also, TRB found that they could not cite the Paraquat RED for all of the Group B data requirements, and therefore found the Group B data requirements outstanding. Therefore, new studies must be submitted, and the Registrant needs to increase the amount of stench agent in their formulation.</p>		
<p>Describe Interactions with Company (describe when contacted and company's response including response to previous negotiated due dates): The Registrant agreed in a phone conversation to submit the outstanding Product Chemistry Group B data requirements, and also increase the amount of stench agent in their formulation. The Registrant also requested a meeting with Jim Tompkins (PM 25) and Hope Johnson of the Herbicide Branch to further discuss the outstanding requirements. The Registrant agreed to a 3 month extension of the PRIA date from the date the Agency received the submission of the outstanding data requirements in the attached letter dated October 3, 2005 (received by the Agency on October 4, 2005).</p>		
<p>Rationale for Proposed Due Date: The Herbicide Branch recommends extending the PRIA date by 3 months from the date of submission to give the Technical Review Branch adequate time (an additional full PRIA timeframe) to review the submission.</p>		
Other Comments:		
Approved: 10 	Disapproved:	
If disapproved, action to be taken:		
OD or DOD Signature:  10-27-05		

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Page _____ is not included in this copy.

Pages 245 through 248 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☐ Attorney-Client work product.
- ☒ Claimed Confidential by submitter upon submission to the Agency.

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Page _____ is not included in this copy.

Pages 249 through 258 are not included in this copy.

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Page _____ is not included in this copy.

Pages 259 through 269 are not included in this copy.

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Fee for Service



This package includes the following:

☐ New Registration

☒ Amendment

☒ Studies? ☐ Fee Waiver?

☐ volpay % Reduction: ____

for Division

☐ AD

☐ BPPD

☒ RD

Risk Mgr.

25

Receipt No.

S-

785030

EPA File Symbol/Reg. No.

82557-R

Pin-Punch Date:

10/4/05

☒ This item is NOT subject to FFS action.

Action Code:

Requested:

Granted:

Amount Due: \$ ____

Parent/Child Decisions:

NON - FEE

(Fee already paid)

Reviewer: Debra M. Bate

Date: 10/05/05

Remarks: Product chemistry data submitted. PM Team will need to renegotiate PRIA due date.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

October 6, 2005

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

ROBERT G. BUTZ
CHEMREG INTERNATIONAL, LLC
SINON USA INC.
1990 OLD BRIDGE ROAD, SUITE 201
LAKE RIDGE, VA 22192-

PRODUCT NAME: PARAQUAT SL
COMPANY NAME: SINON USA INC.
EPA FILE SYMBOL: 82557-R
EPA RECEIPT DATE: 10/04/05

SUBJECT: RECEIPT OF AMENDMENT

DEAR REGISTRANT:

The Office of Pesticide Programs has received your application for an amendment and it has passed an administrative screen for completeness.

During the initial screen we determined that the application appears to qualify for fast track review. The package will now be forwarded to the Product Manager for review to determine its acceptability for fast track status.

If you have any questions, please contact Registration Division, Risk Management Team 25, at (703) 305-5697.

Sincerely,

A handwritten signature in cursive script, appearing to read "J. White".

Front End Processing Staff
Information Services Branch
Information Technology & Resources Management Division

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FEE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OPPTS/OPP/RD/TRB/PRODUCT CHEMISTRY TEAM

WASHINGTON, D.C. 20460

DATE OUT: September 28, 2005

SUBJECT: Product Chemistry Review of Elixir
Barcode #:322003 Decision #:359653 Reg No:82557-R
PC Code(s):061601 Food Use: YES

FROM: Linda L. Kutney, Chemist *Linda L Kutney*
Product Chemistry Team
Technical Review Branch/RD (7505C) *9/28/05*

TO: James Tompkins, Hope Johnson PM-25
Herbicide Branch/ RD (7505C) *SJH 9/28/05*

INTRODUCTION:

This review is an amendment of our previous review, dated 9/14/05.

ChemReg, on behalf of Sinon USA Inc of the ROC, has submitted product chemistry data to support a basic CSF (dated 7/26/05) for Elixir, Reg No 82557-R, containing 43.80% paraquat dichloride. This product is to be used on various food crops. Data were submitted under MRID 46613801.

The Registrant claims substantial similarity between the physical chemical properties of their proposed product and the product having Reg No 100-1074. They further cite the RED for paraquat as fulfilling the Subgroup B requirements for their product.

SUMMARY OF FINDINGS:

1. Storage and disposal statements on the label are acceptable.
2. Pending acceptance of all inerts in the technical concentrate, all inerts are acceptable for the proposed use.
3. The nominal concentration of the ai agrees with the label claim, as required in PRN 91-2.
4. Our 9/14/05 review incorrectly identified a difference between the nominal concentration of emetic in the proposed and cited product. This has now been found not to be an issue.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 28 2005

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Robert Butz
ChemReg International, LLC
For: Sinon USA Inc.
1990 Old Bridge Rd, Suite 201
Lake Ridge, VA 22192-2383

RE: Paraquat SL Herbicide
EPA File Symbol 82557-R
Product Chemistry Review

Dear Mr. Butz:

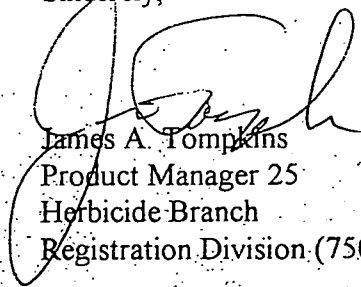
The product chemistry studies, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, do not meet the data requirements as specified in 40 CFR 158.190. The following have been concluded as data gaps by the Technical Review Branch, and must be resubmitted and approved before registration of this product can be granted:

- a) While the nominal concentration of the proposed product and the cited product are identical, they cannot be considered substantially similar because the amount of 'stench' agent in the proposed product falls below the lower certified limits of the required agent for the cited product.
- b) The Subgroup B Product Chemistry data requirements cannot be extracted from the generic Reregistration document (Paraquat RED). These data requirements are outstanding.
- c) The Subgroup A data requirements are currently classified as acceptable. However, if you decide to increase the level of the 'stench' agent in your formulation so that the determination can be made that the pending product is substantially similar to the cited product, revised Subgroup A data (in the form of a revised CSF) will need to be submitted.

Please note that the Certification With Respect To Citation of Data form is also still outstanding and must be submitted before registration of this product can be granted.

If you have any questions, please contact Hope Johnson at 703-305-5410.

Sincerely,

A handwritten signature in black ink, appearing to read 'James A. Tompkins', is written over the typed name and title.

James A. Tompkins

Product Manager 25

Herbicide Branch

Registration Division (7505C)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

TECHNICAL REVIEW BRANCH
SIMILARITY CLINIC DETERMINATION

September 19, 2005

MEMORANDUM

Subject: Name of Pesticide Product: Elixir™
 EPA File Symbol: 82557-R
 DP Barcode: D320747
 Decision No.: 359653
 PC Code: 061601 Paraquat dichloride

From: Breann Hanson, Biologist *B. Hanson*
 Technical Review Branch
 Registration Division (7505C) *SN*

To: Hope Johnson, RM Team 25
 Herbicide Branch
 Registration Division (7505C)

Applicant: Sinon USA Incorporated
 1080 Carol Lane, Suite 264
 Lafayette, CA 94549

FORMULATION FROM LABEL:

<u>Active Ingredient:</u>		<u>by wt.</u>
061601	Paraquat dichloride CAS No. 1910-42-5	43.8%
<u>Inert Ingredients:</u>		<u>56.2%</u>
Total:		100.0%

ACTION REQUESTED: The Risk Manager requests:

"The registrant has submitted an application for a new end use paraquat product, using the technical 70552-1, and a me-too with 100-1074. They are citing the acute tox 6 pack from the technical, and have supplied the Product Chemistry Group A data, but are citing the Group B data from the Paraquat RED. Please note that there is currently a revised CSF for the technical in house under DP#320746 for increasing the emetic and adding a blue dye. Please review for substantial similarity to REG. No. 100-1074, and for acceptance of the cited 6 pack acute tox data. I have included the labels, Data matrices, CSF's and letters."

BACKGROUND: Sinon USA Incorporated has applied for registration of Elixir™, EPA File Symbol: 82557-R, claiming similarity to Gramoxone® Max, EPA Reg. No. 100-1074. The submission includes a label, CSF and cover letter for the proposed product 82557-R and a CSF and label for the cited product. The registrant is citing the acute toxicity data used in registration of the technical paraquat product from which 82557-R is made, EPA Reg. No. 70552-1. Both the proposed and cited product, 100-1074, are weed, grass and harvest desiccant/defoliant herbicides. The acute oral, acute dermal, acute inhalation, primary eye, primary dermal and dermal sensitization studies (MRIDs 436850-01, 460988-03 through 07) for the technical product, 70552-1, were originally reviewed by TRB (Hanson, EPA File Symbol: 70552-R, D299079, 07/25/2004) and all graded acceptable, except for the acute inhalation study. The acute inhalation study was graded as unacceptable yet the product assigned a toxicity category I for the inhalation route due to the known toxicity of the active ingredient.*

RECOMMENDATIONS: We have evaluated the formulations of the proposed product, 82557-R, the cited product, 100-1074, and have found that they are substantially similar. In addition, the proposed uses of the two products are substantially similar. TRB has also determined that 82557-R is substantially similar to 70552-1 and that the acute toxicity profile of the technical product may be used to support registration of 82557-R. The signal word is DANGER, based on the accepted label and acute toxicity profile of the technical product. TRB recommends that the proposed product, EPA File Symbol 82557-R, use the same precautionary labeling and first aid statements as the technical product, EPA Reg. No. 70552-1.

The acute toxicity profile for Elixir™, EPA File Symbol: 82557-R, is:

Acute oral toxicity	II	Cited MRID 43685001
Acute dermal toxicity	III	Cited MRID 46098803
Acute inhalation toxicity*	I	Cited MRID 46098804
Primary eye irritation	I	Cited MRID 46098805
Primary skin irritation	IV	Cited MRID 46098806
Dermal sensitization	Negative	Cited MRID 46098807

Note to RM: On the proposed label the registrant is claiming a toxicity category II classification for eye irritation, ie. "Causes substantial but temporary eye injury." Due to the toxicity category of I for eye irritation, TRB recommends that the language be changed to read "Causes

irreversible eye damage." This error is also noted on the accepted cited label.

LABELING: Based on the toxicity profile above, the following are the precautionary and first aid statements for this product as obtained from the Label Review System.

PRODUCT ID #: 082557-00001

PRODUCT NAME: Elixir™

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals:

SIGNAL WORD: DANGER
POISON ☠

Restricted Use Pesticide due to toxicity categories. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Fatal if inhaled. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin. Do not breathe spray mist. Do not get in eyes or on clothing. Avoid contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

First Aid:

If inhaled:

- Move the person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

If swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything to an unconscious person.

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If on skin:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

Note to PM/CRM/Registrant:

The proposed label should contain a Note to Physician which addresses the category I Acute Inhalation Toxicity. The following statements are suggested types of information that may be included, if applicable:

- technical information on symptomatology;
- use of supportive treatments to maintain life functions;
- medicine that will counteract the specific physiological effects of the pesticide;
- company telephone number to specific medical personnel who can provide specialized medical advice.

Page 280 is not included in this copy.

Pages _____ through _____ are not included in this copy.

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FEE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OPPTS/OPP/RD/TRB/PRODUCT CHEMISTRY TEAM :

WASHINGTON, D.C. 20460

DATE OUT: September 14, 2005

SUBJECT: Product Chemistry Review of Elixir
Barcode #:320748 Decision #:359653 Reg No:82557-R
PC Code(s):061601 Food Use:YES

FROM: Linda L. Kutney, Chemist *Linda L. Kutney*
Product Chemistry Team
Technical Review Branch/RD (7505C) *9/14/05*

TO: James Tompkins, Hope Johnson PM-25
Herbicide Branch/ RD (7505C)

9/21/05

INTRODUCTION:

ChemReg, on behalf of Sinon USA Inc of the ROC, has submitted product chemistry data to support a basic CSF (dated 7/26/05) for Elixir, Reg No 82557-R, containing 43.80% paraquat dichloride. This product is to be used on various food crops. Data were submitted under MRID 46613801.

The Registrant claims substantial similarity between the physical chemical properties of their proposed product and the product having Reg No 100-1074. They further cite the RED for paraquat as fulfilling the Subgroup B requirements for their product.

SUMMARY OF FINDINGS:

1. The storage and disposal statements on the label are acceptable.
2. Pending acceptance of all inert components in the technical concentrate, all inerts are acceptable for the proposed use.
3. The nominal concentration of the ai agrees with the label claim, as required in PRN 91-2.

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TRB CONCLUSIONS:

Paraquat falls into the highest category of toxicity, having the signal word, 'danger.' For this reason both stench and emetic agents are added to the product for the safety of all persons exposed to products containing paraquat. Although the nominal concentration of the proposed product and the cited product are identical, they may not be considered substantially similar because the amount of 'stench and emetic' agents in the proposed product fall below the lower certified limits of those require agents, for the cited product. This may pose a safety concern, at the very least there may be a significant difference in their odors (Guideline 830.6304).

Subgroup A data requirements are acceptable, but Subgroup B data requirements are necessary and may not be extracted from the generic Reregistration Document (Paraquat RED).

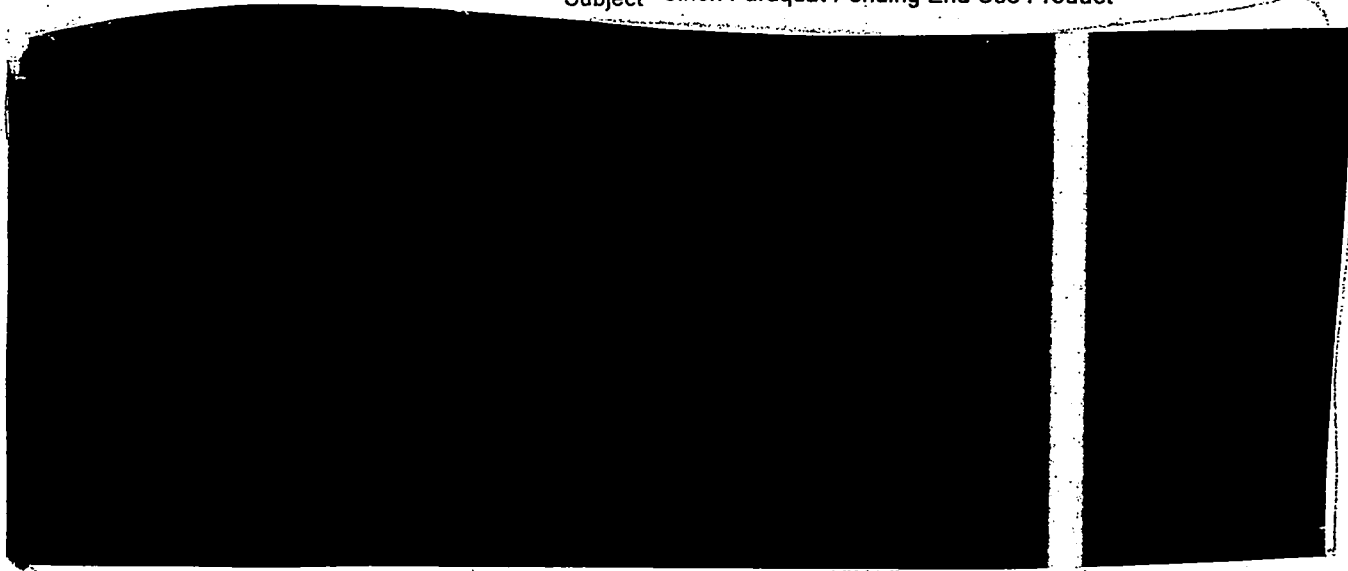
PRODUCT CHEMISTRY DATA (SERIES 830 Subgroup A & Subgroup B)

Subgroup A, Guideline 830.---	Data Satisfied?	MRID No.
1550. Chemical Identity(CSF)	Yes	CSF
1600. Beginning Materials	Yes	46613801
1650. Formulation Process	Yes	46613801
1670. Discussion of Impurities	Yes	46613801
1700. Preliminary Analysis	Yes 43.91, 43.84, 43.72, 44.14 43.97	46613801
1750. Certified Limits(CSF)	Yes	CSF
1800 Enforcement Analytical Method	Yes HPLC-external standards used	46613801



Hope
Johnson/DC/USEPA/US
09/14/2005 10:31 AM

To Jim Tompkins/DC/USEPA/US@EPA
cc Joanne Miller/DC/USEPA/US@EPA
bcc
Subject Sinon Paraquat Pending End Use Product



Hope A. Johnson
U.S. Environmental Protection Agency
Office of Pesticide Programs
Registration Division
Herbicide Branch
Phone: 703-305-5410
Fax: 703-308-1825
7505C

*Perhaps - have a time
limited registration*

Internal deliberative information has been removed



Jerry Wells
Senior Regulatory
Product Manager

Syngenta Crop Protection, Inc.
410 Swing Road
P.O. Box 18300
Greensboro, NC 27419-8300

Tel 336-632-6324
Fax 336-632-2012
Internet jerry.wells@syngenta.com

September 14, 2005

By Hand Delivery

Document Processing Desk (VOL CAN)
Office of Pesticide Programs (7504C)
U.S. Environmental Protection Agency
Room 266A, Crystal Mall 2
1801 South Bell Street
Arlington, VA 22202-4501

Attention: James Tompkins, Team Leader 25

**SUBJECT: Paraquat – Request for Conditional Voluntary Cancellation of
Cyclone Concentrate (Alternate Brand Name Gramoxone Max)
EPA Reg. No. 100-1074**

Dear Mr. Tompkins:

Syngenta Crop Protection, Inc. hereby requests conditional voluntary cancellation under FIFRA Section 6(f) for Cyclone Concentrate (alternate brand name Gramoxone Max), EPA Reg. No. 100-1074 containing paraquat as the sole active ingredient. EPA recently approved a safer, replacement paraquat product called Gramoxone Inteon (EPA Reg. No. 100-1217; EPA approval date August 17, 2005). The new registration has been shown to significantly reduce acute oral toxicity in dogs and meets the safety standard in EPA's May 19, 2005 amendment to Syngenta's sole paraquat manufacturing-use product, Paraquat Concentrate (EPA Registration No. 100-1067). Syngenta believes that this improvement will essentially eliminate fatalities from accidental human ingestion.

Syngenta has begun the process of phasing in the new product and phasing out the old product. We already have obtained a number of state registrations for the new product and have applied and will continue to apply for others, including an application for registration in California dated today. Syngenta is hopeful that California will grant a registration for the new product in 2006. However, as you appreciate, California review is a more substantial process than in most states and it is a particularly important state in terms of paraquat use. Moreover, Syngenta's practice is not to stockpile paraquat. In light of these considerations related to assuring that a minimum amount of the old product is manufactured and the fact that the California decision and its timing lie within the control of California state authorities, we are requesting today that EPA grant Syngenta's conditional request for federal cancellation as specified below.

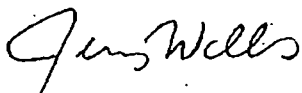
284

Subject to the conditions set forth below, Syngenta requests cancellation of EPA Reg. No. 100-1074 effective September 30, 2006 or such later date as EPA identifies in a formal cancellation order. Syngenta will cease manufacture prior to the effective date of the cancellation. Today's voluntary cancellation request is subject to the condition that any minimal stocks that have been packaged, labeled, and released for shipment before the effective date of cancellation may be further legally distributed and sold until they are exhausted.

Today's request also is made subject to the condition that Syngenta receives a California state registration equivalent to its federal Reg. No. 100-1217 (Gramoxone Inteon) by July 31, 2006. Syngenta's application for such a registration is dated today. Syngenta shall notify EPA within 30 days of its receipt of California registration. In the event that the state of California has not granted such a registration to Syngenta by July 31, 2006, Syngenta shall notify EPA of that fact by July 31, 2006, at which point the condition for Syngenta's request for voluntary cancellation shall be deemed not to have been met and therefore the request withdrawn, provided however that Syngenta retains the alternative right to seek to amend its cancellation request.

Thank you for your attention to this request. Please call me at 336-632-6324 should EPA need any further information about this request.

Kind regards,



Jerry Wells
Senior Regulatory Product Manager
Syngenta Crop Protection, Inc.

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Page 286 is not included in this copy.

Pages _____ through _____ are not included in this copy.

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Joanne / Jim

LAW OFFICES
BEVERIDGE & DIAMOND, P.C.
SUITE 700
1350 I STREET, N.W.
WASHINGTON, DC 20005-3311
(202) 789-6000

KATHRYN E. SZMUSZKOVICZ
(202) 789-6037
kszmuszkovicz@bdlaw.com

TELECOPIER (202) 789-6190

August 24, 2005

Robert G. Perlis
Office of the General Counsel
U.S. Environmental Protection Agency
Ariel Rios Building, Mail Code 2333A
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Re: Petition to Deny Sinon USA Inc.'s Application to Register an End-Use Pesticide
Product Containing the Active Ingredient Paraquat Dichloride Under the
Proposed Name "ElixirTM"

Dear Mr. Perlis:

Syngenta Crop Protection, Inc.¹ (Syngenta) hereby petitions the Environmental Protection Agency (EPA or the Agency) to deny Sinon USA Inc.'s (Sinon's) application to register an end-use pesticide product containing the active ingredient paraquat dichloride (paraquat) under the proposed name "ElixirTM". For reasons spanning from Sinon's highly inappropriate choice of a name connoting beneficial attributes from human consumption, to its failure to make an offer to pay compensation, to the safety of its formulation, among other reasons discussed below, Sinon's application fails to meet the Federal Insecticide, Fungicide, and Rodenticide Act's (FIFRA's) standards for registration. Syngenta thus brings this Petition under FIFRA, 7 U.S.C. §§ 136-136y, as amended, EPA's FIFRA regulations, including 40 C.F.R. Part 152, the Petition Clause of the First Amendment, and the Administrative Procedure Act, 5 U.S.C. § 555(b).

Sinon's bizarre choice of an enticing name -- Elixir -- for a pesticide that is known to cause human death and injury by ingestion raises concerns regarding its understanding of stewardship obligations and its fitness to hold a registration for this broadly-used herbicide.

¹ Syngenta is the principal EPA data submitter for paraquat and the successor owner of the paraquat registrations and data of Zeneca Ag Products Inc. Syngenta is used throughout this Petition to refer to Syngenta, Zeneca Ag Products Inc., and each of their predecessors.

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Sinon's trademark choice is inexplicable, and EPA should unequivocally reject it. Moreover, Sinon's seeming ignorance of the danger in naming a toxic pesticide Elixir -- suggesting that the paraquat is potable and beneficial -- once again calls into question the company's competence and integrity to shoulder the stewardship responsibilities attendant to manufacturing, distributing and marketing a widely used herbicide such as paraquat. See EPA, *Termilind Limited; Notice and Order of Revocation of Registrations*, 62 Fed. Reg. 61,890 (Nov. 19, 1997). This new concern regarding Sinon's fitness is in addition to the unresolved issues presented in Syngenta's January 23, 2004 Petition to Deny Sinon Corporation's application to register technical paraquat.

Today's Petition is prompted by Syngenta's recent receipt of a letter from Sinon styled as a notice of its "intent to apply" for an end-use paraquat product under the proposed trademark "Elixir." Letter from R. Butz, ChemReg International, LLC, Registration Agent for Sinon, to Syngenta (Aug. 2, 2005) (Exhibit 1). Sinon has not made the offer to pay compensation to Syngenta required by FIFRA § 3(c)(1)(F)(iii). Moreover, Sinon has not provided its draft label or the data matrix supporting its Elixir application, thus impeding Syngenta's ability to protect its data rights guaranteed under FIFRA. Today's Petition is based on the facts known to Syngenta at this time and will be supplemented to the extent that further information becomes available to it.

To Syngenta's knowledge, Syngenta is the only other U.S.-registered source of paraquat and it is not providing paraquat product to Sinon. Thus, it assumes for purposes of this Petition that Sinon is seeking to formulate Elixir from its affiliate Sinon Corporation's recently registered technical (EPA Registration No. 70522-1). That technical registration relied on Syngenta's data, and Sinon's notice of intent evinces its citation to Syngenta data to support the instant application as well. As such, in addition to the new flaws in the current application, Sinon's Elixir application mirrors the fatal flaws in Sinon Corporation's technical registration, and Syngenta requests that its July 5, 2005 Petition to Revoke Sinon Corporation's technical registration be incorporated by reference and reviewed by EPA for this Petition. It would be wrong -- and compound the harm engendered by EPA's erroneous decision to grant Sinon's paraquat technical registration in the first place -- were EPA to authorize Sinon's formulation of end-use products from an illegal technical registration that should be revoked and declared void *ab initio*. In any event, the new flaws in Sinon's end-use application provide independent bases to deny the new application.

Most importantly, Sinon's Elixir application raises in an even more immediate and pressing context the incremental risk issue posed by Sinon's technical registration. Sinon seeks to commercialize and put into the stream of commerce a new paraquat end-use product that does not meet the human health and safety standard established by Syngenta's manufacturing and end-use paraquat registrations, EPA Registration Nos. 100-1067 and 100-1217. Syngenta's manufacturing use product may only be used to formulate end-use products meeting a more

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stringent safety standard that will significantly reduce or eliminate fatalities from accidental paraquat ingestions.² Syngenta's new end-use registration meets that standard. See MRID Nos. 46364510-11 and 4636517-18. For instance, in MRID 46364510, the 602 mg/kg dose of Syngenta's new end-use product in dogs resulted in a peak plasma concentration of 2.8 paraquat ion µg/ml, which is similar to the result using only a 43 mg/kg dose of a paraquat formulation without the gelling agent in Syngenta's new end-use product (see page 5 below for a detailed description of the natural alginate that serves as a gelling agent in Syngenta's new end-use product). An end-use paraquat product such as that proposed by Sinon, which presumably is more comparable to the second formulation mentioned above (without the gelling agent), would create an incremental risk that is both intolerable under FIFRA and contrary to EPA's mandate to protect human health. It is paramount that EPA not grant end-use product registrations that will render superfluous the safety advance made possible by Syngenta's amended manufacturing use product and new end-use registration.

Finally, Sinon has again indicated to Syngenta its intent to cite data owned by Syngenta in support of its end-use registration without making a timely offer to pay compensation to Syngenta for reliance on those data. Until a proper offer is made, Sinon may not rely on Syngenta's data, its application is incomplete, and EPA must deny it. Sinon's abuse of the selective method application process with regard to its technical application led to its failure to cite required data and demonstrates the need for proper, timely offers to pay, which must be enforced here. Sinon's renewed attempt to unfairly manipulate the registration system is unacceptable.

I. BACKGROUND

A. Registration History of Paraquat

EPA must strictly enforce FIFRA's requirements for follow-on applicants for this widely-used herbicide. Paraquat was first registered for use in the United States in 1964. Over its four decades of use, paraquat has provided excellent non-selective weed control. It is one of the world's most widely-used herbicides. Paraquat provides important environmental benefits, including allowing more no-till farming and preserving weed root systems, which enhance soil

² The safety standard required on Syngenta's label provides as follows: "This product is to be used only for formulation into herbicides with an acute oral toxicity to dogs (lethal effects) that exceeds 128 mg paraquat ion/kg body weight (602 mg of formulation/kg body weight for a 240 g paraquat ion/l formulation) and that contain an effective emetic that meets FAO specification, a dye, and an olfactory alerting agent that have been cleared under FIFRA for use in pesticides registered for food use." May 19, 2005 label for EPA Registration No. 100-1067 at p. 5.

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conservation. This achievement rests on the work of Syngenta and the high regulatory standards upheld by EPA. A number of companies other than Syngenta have registered products containing paraquat over the years, but none of the companies, except Syngenta, has consistently supported its products and registrations. This is apparently due to difficulties faced by other companies in producing paraquat that meets EPA's standards, in meeting stewardship demands, or for other reasons not known to Syngenta. In any event, Syngenta is the only company that consistently has embraced paraquat product stewardship responsibilities in the United States, submitted the data that support registration, and consistently committed to generating the data required by EPA to maintain paraquat registrations.

Paraquat is registered for numerous uses, involving diverse exposure settings, highlighting the importance of rigorous adherence to registration standards for this herbicide. It is a non-selective contact herbicide, registered to control weeds and grasses in a variety of agricultural and non-agricultural areas and as a harvest aid for several crops including cotton. About 1,500 tons of paraquat is applied annually in the United States. See EPA's 1997 paraquat Reregistration Eligibility Decision (RED) at 8. Agricultural uses include cotton, corn, fruits, peanuts, potatoes, soybeans, sugar cane, tree nuts, vegetables, and others. Non-agricultural use is primarily for weed control around airports, electric transformer stations, and commercial buildings.

For reasons which include its high acute oral toxicity and human fatalities due to intentional and accidental ingestion, EPA classified paraquat as a Restricted Use Pesticide in 1978, see RED at 9, and paraquat remains a Restricted Use Pesticide today. EPA issued a Registration Standard for paraquat in June 1987; an important part of this Registration Standard was the requirement to include an effective emetic in paraquat manufacturing and end-use formulations to encourage rapid vomiting after paraquat ingestion. See Registration Standard at 27. The Registration Standard was followed by a Data Call-In (DCI) in December 1991. The 1991 DCI required submission of ecological effects, environmental fate and residue chemistry data.

EPA declared paraquat eligible for reregistration in its August 1997 RED. EPA's RED was accompanied by a DCI requiring submission of additional data in the following areas: product-specific product chemistry, general product chemistry, acute toxicity, residue chemistry, and spray drift. Syngenta consistently has addressed EPA's data requirements, including these.

Syngenta also has invested significantly in product stewardship to continually improve the safety of paraquat. In 1982, for instance, EPA cited the importance of incorporating an emetic in paraquat formulations to the Agency's decision not to initiate cancellation proceedings. See EPA, Paraquat Decision Document (July 1, 1982) at 40. And in its 1987 Registration Standard EPA reiterated its requirement that paraquat products include an effective emetic. See Registration Standard at 27. As EPA noted in the 1997 RED, after Syngenta added an emetic and an olfactory alerting agent (stenching agent) and changed the color of paraquat, there was a

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decline of almost fifty percent in accidental and intentional ingestions. *See* RED at 33. It has been EPA's normal practice for years to require registrants to include an emetic and an olfactory alerting agent in paraquat products, recognizing their role in protecting human health.

Consistent with this history, on May 19, 2005, EPA approved an amendment to Syngenta's manufacturing use product that restricts its use to making paraquat end-use products that meet a heightened human health standard. *See* footnote 2, above. Not only does this standard require an emetic, olfactory alerting agent and added color, which has been normal practice for years, but the standard also requires that paraquat have a reduced level of acute oral toxicity. Syngenta is able to meet this standard by formulating products that limit the absorption of paraquat from the human intestine, where absorption is the highest, through use of a combination of a natural alginate that gels when entering the low pH of the stomach, an increased amount of an effective emetic, and a purgative. This safer formulation is the culmination of years of research and development by Syngenta, and consultations and input from regulatory authorities around the world. Syngenta submitted to EPA last year, and met with EPA to review, the data and analyses necessary to demonstrate the dramatic improvement in human safety that this innovation provides. Information on this innovation has been available to the public in the United States since Syngenta made a presentation on it at the Weed Science Society of America's annual meeting earlier this year.

Syngenta applied for the amendment to its manufacturing use product as a concrete demonstration of its commitment to the safer formulation even though EPA had not yet approved Syngenta's application for such end-use products. EPA has now also approved Syngenta's end-use product meeting the new standard.

In light of the possibility of eliminating fatalities from accidental ingestion of paraquat, Syngenta has gone to unusual lengths to facilitate the new technology's availability. With EPA's encouragement and although Syngenta's innovation is protected by patent, Syngenta will make its innovation available on reasonable terms under tolling agreements to companies, including Sinon and other competitors, that gain a registration to sell paraquat in the U.S. but have not identified their own, alternate routes to ensuring safety at the new level.

B. Syngenta is Filing This Petition to Protect Its Rights Under FIFRA

Syngenta's Petition is prompted by Sinon's letter of intent to apply for a registration of the end-use pesticide product "Elixir," containing the active ingredient paraquat. Letter from R. Butz, ChemReg International, LLC, Registration Agent for Sinon, to Syngenta (Aug. 2, 2005) (Exhibit 1). The letter states that Sinon intends to cite in support of Sinon's application data that were originally submitted to EPA by Syngenta, but admits that Sinon has not made an offer to pay. *Id.*

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Syngenta is entitled to petition EPA to deny Sinon's application pursuant to FIFRA Section 3(c)(1)(F) and the supporting regulations at 40 C.F.R. Part 152. Syngenta is a current registrant of paraquat technical and end-use paraquat products, and sole owner and original submitter of the vast majority of the studies that satisfy paraquat data requirements. As an original data submitter of studies that satisfy data requirements that Sinon has not satisfied, and lacking an offer from Sinon to pay compensation for Sinon's reliance on Syngenta's data, Syngenta is entitled to bring this Petition. 40 C.F.R. § 152.99(a)(2).

In addition to a data submitter's specific rights under 40 C.F.R. § 152.99, EPA has recognized its obligation to give due consideration to petitions to deny pursuant to the Petition Clause of the First Amendment to the United States Constitution. *See, e.g.,* Letter from J. Jones, Director, Registration Division, Office of Pesticide Programs, EPA, to J. Wright and J. Liss (June 13, 2000).

Syngenta also is entitled to petition EPA under the Administrative Procedure Act (APA), 5 U.S.C. § 555(b), which provides:

So far as the orderly conduct of public business permits, an interested person may appear before an agency or its responsible employees for the presentation, adjustment, or determination of an issue, request, or controversy in a proceeding, whether interlocutory, summary, or otherwise, or in connection with an agency function.

Id.; *see also Block v. Securities & Exchange Commission*, 50 F.3d 1078, 1085 (D.C. Cir. 1995) (noting that Section 555(b) of the APA "is universally understood to establish the right of an interested person to participate in an ongoing agency proceeding").

II. ARGUMENT

A. *Because Sinon's "Elixir" Will Create an Improper Increase in Incremental Risk, Sinon's Application Does Not Satisfy FIFRA and Must Be Denied*

Sinon's application to market and sell Elixir plainly creates an incremental risk to human health that is impermissible under FIFRA and requires denial of the application. EPA granted an amendment to Syngenta's paraquat manufacturing use product limiting use of Syngenta's registration to formulating paraquat products capable of virtually eliminating fatalities from paraquat accidental ingestions and then granted such an end-use registration to Syngenta. *See* EPA Registration Nos. 100-1067 and 100-1217; page 3 and footnote 2, above. EPA cannot approve a Sinon registration that would "significantly increase the risk of any unreasonable adverse effect on the environment" over these paraquat registrations. FIFRA § 3(c)(7)(A)(ii).

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1. End-use Registrations Must Incorporate the New Safety Standard

Irrespective of Sinon's improper receipt of a technical paraquat registration that does not reflect the new human safety standard, it is incumbent that, at a minimum, EPA require all *end-use* registrations to meet the new standard. FIFRA § 3(c)(7)(A) directs EPA to consider before registering any follow-on pesticide the increase in risk, *i.e.*, the incremental risk, posed by the registration of new products. *See* EPA (Proposed) Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act; Conditional Registration, 47 Fed. Reg. 57,624, 57,626 (Dec. 27, 1982) ("Incremental risk assessment is central to the conditional registration program"). In EPA's words, FIFRA makes "clear that the Agency is required to assess the incremental risk of each product and each use as a part of the review of all applications for conditional registration." *Id.* at 57,626, 57,627.

The existence of a safer version of the same pesticide is a decisive factor in determining whether a proposed pesticide registration would significantly increase the risk of any unreasonable adverse effect on the environment. The development of safer versions of a particular pesticide, like the amendment to Syngenta's manufacturing use formulation for paraquat and Syngenta's new end-use registration, alters the risk-benefit balance such that Sinon's paraquat no longer meets the conditional registration requirement of FIFRA § 3(c)(7)(A). *See* EPA, Incentives for Development and Registration of Reduced Risk Pesticides, 57 Fed. Reg. 32,140, 32,142 - 32,143 (July 20, 1992).

EPA has had since last September the data and analyses that demonstrate that a new safety standard for paraquat has been reached. This safer formulation is the culmination of research and development by Syngenta, and consultations and input from regulatory authorities around the world. Moreover, the safer formulation will be available to other paraquat registrants. Because the safer formulation holds the promise of eliminating fatalities from accidental ingestion, Syngenta, with EPA's encouragement, has pledged to make the technology available on reasonable terms to companies through a tolling arrangement. Sinon has been aware of this technology since at least when Syngenta filed its Petition to Revoke on July 5, 2005, yet it has expressed no interest in adopting this safety advance voluntarily.

Despite this human safety advancement, EPA recently expedited its approval of a new source of technical paraquat for Sinon. Sinon's technical is that company's counterpart to Syngenta's manufacturing use product and seeks to emulate it. However, EPA granted Sinon's registration on the very day that EPA approved the amendment of Syngenta's manufacturing use product without requiring that Sinon's technical -- like Syngenta's manufacturing use product -- be used to only formulate end-use products that meet the new human safety standard.

There is no basis in law for this disparate treatment. EPA reviewed Sinon's technical registration under FIFRA § 3(c)(7)(A), yet Sinon's paraquat product does not meet that section's requirement that it "differ [from other similar products] only in ways that would not significantly

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increase the risk of unreasonable adverse effects on the environment.”³ Sinon’s registration should not have been granted because it fails an incremental risk analysis, and is now subject to a Petition to Revoke filed by Syngenta on July 5, 2005.

The incremental risk analysis required by FIFRA § 3(c)(7)(A) applies to Sinon’s end-use application as well. The evidence before EPA when it considers Sinon’s Elixir application, already reflected in the Agency’s approval of Syngenta’s amendment to its manufacturing use product and new end-use registration, compels a finding that Sinon’s end-use product will result in a legally intolerable increase in incremental risk, and, therefore, EPA should not issue a conditional registration to Sinon under FIFRA § 3(c)(7)(A). *See* 47 Fed. Reg. at 57,626. Assuming Sinon does not submit data showing that it meets an equivalent human health standard, there is nothing to contradict the data in EPA’s files showing that allowing the sale of Elixir will result in a legally intolerable increase in incremental risk, and the registration should not be granted. *See* 47 Fed. Reg. 57,624, 57,631 - 57,632 (“[I]f the ‘no incremental risk finding’ can be made, [EPA] will grant a conditional registration. If the data are insufficient even to determine whether there are incremental risks, no registration can be granted until the necessary data are submitted to the Agency.”).

At the very least, after Sinon makes a sufficient offer to pay, it should receive a conditional registration that allows sales of paraquat failing to meet the new health standard for only as long as Syngenta is allowed to sell such products. FIFRA § 6(e). Any registration granted to Sinon would have to be based at least upon the condition that Sinon discontinue its manufacture and sale of its riskier paraquat under the same terms and conditions applied to Syngenta. *See, e.g.,* EPA, *Notice of Preliminary Determination to Terminate Special Review*, 61 Fed. Reg. 8,185, 8,187 (March 1, 1996) (describing Griffin Corporation’s agreement to accept the terms and conditions of DuPont Agricultural Products’ phase-out of cyanazine products as a condition for following onto DuPont’s cyanazine in light of DuPont’s voluntary cancellation of its cyanazine registrations); EPA, *Existing Stocks of Pesticide Products; Statement of Policy*, 56 Fed. Reg. 29,363, 29,367-29,638 (June 26, 1991) (noting that EPA generally will permit a registrant to sell or distribute existing stocks of a product for 18 months following EPA’s approval of an amendment to the product’s label and that EPA generally will permit a registrant to sell or distribute existing stocks for one year after receipt of many types of voluntary cancellation requests). If Sinon wished to continue making and selling paraquat, it would need to meet the new human safety standard for paraquat, either with its own innovation or, by agreement, with Syngenta’s technology on the same schedule as Syngenta is required to do so.

³ The term “unreasonable adverse effects on the environment” is defined under FIFRA to mean any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide. FIFRA § 2(bb), 7 U.S.C. § 136(bb).

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2. An EPA Decision to Ignore the New Safety Standard Will be Subject to Heightened Judicial Scrutiny

Finally, Syngenta reserves its right to seek judicial review of any action by EPA contrary to FIFRA and the APA, including a grant of paraquat registrations to Sinon that violate EPA's incremental risk standard under Section 3(c)(7)(A). *See* 40 C.F.R. § 152.99(c)(1); FIFRA §§ 16(a) and (c). A decision by EPA to grant a paraquat registration that is inconsistent with a safety standard already established by EPA in a different paraquat registration would be subject to searching scrutiny by a reviewing court. *See, e.g., West Harlem Environmental Action v. EPA*, No. 04 Civ. 8858, 2005 U.S. Dist. Lexis 15955 (S.D.N.Y. Aug. 7, 2005) (reversing and remanding EPA amendment to RED for rodenticide cluster that reversed RED's requirement for a bittering agent in rodenticides).

As illustrated in the *West Harlem* case, an EPA decision to abandon the new safety standard would require additional analysis and explanation by the Agency to demonstrate that "EPA considered all of the statutorily-mandated factors. . . . [and undertook a] careful weighing of the evidence that was EPA's responsibility." *Id.* at *20. Here, the record demonstrates that accidental ingestion of paraquat poses a public health risk that is mitigated by the new safety advancement. EPA has now set that advancement as a benchmark by the amendment to Syngenta's paraquat manufacturing use registration and Syngenta's new end-use registration. Without a compelling technical basis for backtracking on the safety standard, any such effort by EPA is likely to be rejected by the courts.

B. Sinon's Choice of the Trademark Name "Elixir" Calls Into Question the Company's Ability To Responsibly Steward Paraquat Products

Sinon's application to market its end-use formulation under the brand name Elixir can only further increase the risk of allowing a new end-use registration under the old safety standard.⁴ EPA and Sinon are both well-aware of the regrettable number of paraquat poisonings and deaths, including of children, in recent years. Indeed, it is with the aim of possibly eliminating fatalities from accidental paraquat poisonings that Syngenta developed the technology leading to the amendment of its manufacturing use product. Given the history of fatal ingestion associated with paraquat, and the clear interest shared by EPA and Syngenta in

⁴ Elixir's definitions include: (1) a substance or concoction held to be capable of prolonging life indefinitely; (2) a cure-all or panacea; (3) something that acts potently upon a person, invigorating or filling with exuberant energy or cheer; and (4) any of a class of sweetened aromatic preparations that contain variable percentages of alcohol and are used either for their medicinal ingredients or in prescriptions for their flavoring quality. WEBSTER'S THIRD NEW INT'L DICTIONARY OF THE ENGLISH LANGUAGE (unabr. 1981).

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mitigating this hazard as much as possible, Sinon's intent to market its own paraquat to the public under the name Elixir shows, at best, irresponsible disregard of the stewardship issues surrounding paraquat.

EPA's regulations prohibit a registrant's use of a brand or trademark that is "false or misleading." FIFRA § 2(q)(1)(A) (stating that a pesticide is misbranded if "its labeling bears any statement, design or graphic representation which is false or misleading in any particular"); FIFRA § 12(a)(1)(E) (stating that it shall be unlawful for any person to distribute or sell "any pesticide which is adulterated or misbranded"); 40 C.F.R. § 156.10(a)(5) (stating that "a pesticide or a device is misbranded if its labeling is false or misleading in any particular. . . ."); 40 C.F.R. § 156.10(b)(2) (stating that "[n]o name, brand, or trademark may appear on the label which: (i) Is false or misleading. . . ."); *see also* EPA, LABEL REVIEW MANUAL, § 12-3 (3d 2003).

The name Elixir dangerously obscures the hazards related to paraquat and would result in a misbranded pesticide. EPA has explained that products with brand names that state or imply safety or efficacy claims, or are false or misleading in any particular, are considered to be misbranded. EPA, PESTICIDE REGISTRATION (PR) NOTICE 2002-X DRAFT "False or Misleading Pesticide Product Brand Names" (March 14, 2002). EPA has specifically noted that a trademark that is false or misleading pursuant to FIFRA can render a product misbranded under FIFRA and result in the product's cancellation. *Id.* The Agency has also emphasized its concern with regard to the use of trademarks to make false or misleading claims, and the need to protect the public from such claims. *Id.* Given EPA's guidance that even in those instances where "safety data indicate a low or very low degree of risk," a trademark that implies absolute safety or no risk is considered misleading, the Agency plainly can not accept Sinon's presentation of paraquat -- a spoonful of which can be fatal -- to the public under the name Elixir.

A "'fitness' or 'reliability' [of the applicant] criterion can . . . be implied as a component of the 'unreasonable adverse effects' standard." *Id.* EPA has recognized that "determining the 'fitness' of an applicant to hold a license or registration is . . . a legitimate end of licensing schemes." EPA, *Termilind Limited; Notice and Order of Revocation of Registrations*, 62 Fed. Reg. 61,890, 61,893 (Nov. 19, 1997). Any responsible registrant would not market a hazardous and potentially fatal product under a name that suggests both human consumption and medicinal, even magical, properties: Sinon's chosen trademark would purposelessly and unacceptably magnify the risks already associated with paraquat, drawing the public, including children, to a dangerous product.

C. *Sinon's "Elixir" Application Is Deficient and May Not Be Considered Because Sinon Has Not Provided an Offer to Pay to Syngenta*

Sinon has stated that it intends to cite in support of Sinon's application paraquat data that were originally submitted to EPA by Syngenta, but admits that Sinon has not made an offer to

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pay. Letter from R. Butz, ChemReg International, LLC, Registration Agent for Sinon, to Syngenta (Aug. 2, 2005) (Exhibit 1). This practice is expressly prohibited by FIFRA, which bars EPA from considering Syngenta's data in support of Sinon's application unless Sinon "has made an offer to compensate [Syngenta] and submitted such offer to [EPA] accompanied by evidence of delivery to [Syngenta]." FIFRA § 3(c)(1)(F)(iii).⁵ Sinon, knowing full well the problems caused by its late and insufficient offer to pay on its technical application, persists in this illegal gamesmanship to hide the basis of its application from Syngenta. EPA must act to deter this illegal practice that is frustrating the proper functioning of the pesticide application process.

A specific basis enumerated in EPA's rules for bringing a petition to deny is an applicant's failure to make an appropriate offer to pay. 40 C.F.R. § 152.99(a)(2)(i). Yet it is impossible for the data owner to file an efficient and meaningful petition when the basic facts about another company's reliance on its own data are being withheld from it. This is precisely the improper obfuscation successfully employed by Sinon Corporation in making its eleventh-hour selective method offer to Syngenta with regard to its technical registration, which it seeks to repeat here.

The sufficiency of data citations must be addressed well before a registration is granted. When Sinon Corporation finally identified on the eve of its technical registration the Syngenta data it was relying on, it became apparent that Sinon had failed to submit significant data required to support its selective method application for a technical registration, including numerous ecotoxicology, chronic toxicity, worker exposure/re-entry, environmental fate and residue chemistry studies. By delaying its offer to pay until the last possible moment, however, Sinon Corporation eliminated Syngenta's opportunity to review the sufficiency of its application

⁵ See also 40 C.F.R. § 152.105 (EPA "will not begin or continue the review of an application that is incomplete"); FIFRA § 33(f)(4)(B) (Pesticide Registration Improvement Act or "PRIA") (EPA's "initial screening" of an application requires a check for "all necessary forms"); § 152.50(f) (an application for registration "must include" certain information, including "materials to demonstrate that [the applicant] has complied with FIFRA Section 3(c)(1)(F)) . . . with respect to satisfaction of data requirements"); § 152.42 (applications for registration must contain the information specified in § 152.50); §§ 152.86(b)(2); 152.93(b)(2); 152.95(b)(2) (the applicant must certify to EPA that it has furnished to an original data submitter both a "notification of his intent to apply for registration" and an "offer to pay the person compensation"); § 152.104 ("[a]n application is incomplete if any pertinent item specified in § 152.50 has not been submitted . . ."); § 152.105 (EPA "will not begin or continue the review of an application that is incomplete"); § 152.80 ("to comply (and for the Agency to determine compliance) with the provisions of FIFRA § 3(c)(1)(F)), "an applicant must submit *with his application* for registration" the information required by Subpart E of 40 C.F.R. Part 152 (Procedures to Ensure Protection of Data Submitters' Rights)) (emphasis added).

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and Sinon obtained its technical paraquat registration on the basis of inadequate data. These deficiencies are now the subject of Syngenta's Petition to Revoke. Letter from Syngenta to R. Perlis, EPA, *Re: Petition to Revoke Sinon Corporation's Registration of Paraquat Technical Concentrate* (July 5, 2005), at 10-16.

It is important, particularly with respect to follow-on applicants using the selective or selective cite-all methods, to provide data submitters sufficient opportunity to evaluate the adequacy of an offer to pay. Indeed, EPA's effective consideration of Sinon's application depends in part on Syngenta's knowledge of the nature of Sinon's application -- the information provided to the original data submitter in the required offer to pay -- since EPA "rel[ies] heavily on data submitters to monitor compliance with the procedures" of the Agency's application and data citation procedures. EPA, *Procedures to Ensure Protection of Data Submitters' Rights*, 49 Fed. Reg. 30,884, 30,889 (Aug. 1, 1984). Under EPA's regulations, if an applicant chooses to use the selective method, it must (among other things) offer to compensate the data submitter, identifying the "specific requirement involved and . . . the study for which the offer to pay is made (by title, EPA Accession Number or Master Record Identification Number, and date of submission, if possible)." 40 C.F.R. § 152.93(b)(2)(ii).⁶ By EPA requiring a *timely* offer to pay that incorporates these features, a data submitter will better be able to determine the particular data on which the follow-on applicant is relying and inform EPA whether sufficient data have been cited. Until it receives Sinon's offer to pay for its Elixir product, Syngenta cannot even determine whether Sinon's application was submitted to EPA using the cite-all or selective method in the first place, let alone begin the process of reviewing the sufficiency of Sinon's data citations.

It is presumable that, as with its technical application, Sinon again wishes to hide from the data submitter, Syngenta, the details of its reliance on data to prevent Syngenta's opportunity -- expressly provided for by law -- to point out the deficiencies in the application. For the petition process to be meaningful, data owners must have timely notice of the information required in compensation offers and an opportunity to respond. FIFRA and its regulations as written provide this by requiring the offer to pay at the time of application. There is little question that Sinon will have to cite extensive Syngenta data to support its Elixir application. To date, according to publicly-available records, there is no evidence that Sinon has submitted any new data to support its Elixir application, which at a minimum requires Sinon's submission of its own product-specific chemistry data. The required submissions are all the more necessary given the serious questions of purity raised in Syngenta's original Petition to Deny. EPA should be

⁶ EPA also encourages follow-on applicants to provide copies of their data matrices and proposed labels to data submitters with their compensation offers. See Draft PR Notice 2002-XXXX, at 3-4.

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gravely concerned with regard to the purity of any end-use product formulated from Sinon Corporation's technical paraquat registration.

EPA's adoption of Sinon's position would leave original data submitters like Syngenta no choice but to petition the Agency to deny each and every application that is not accompanied by a proper offer to pay, in order to determine the extent to which its rights are implicated, and to spur an offer to pay to begin the data compensation process. Until Sinon submits a proper offer to pay compensation to Syngenta, Syngenta requests that EPA deny Sinon's incomplete application, or at least take no action until a complete application under FIFRA is filed, which must include an offer to pay and all necessary product-specific data.

D. Sinon's "Elixir" Application Cannot Qualify for Expedited Registration

Although Syngenta has no access to Sinon's draft label for Elixir, it is reasonable based on Sinon's behavior to assume that, like Sinon Corporation's technical label, Sinon's proposed label incorporates the same unsupported uses that Syngenta's Petition to Revoke identified in Sinon's technical label. See Letter from Syngenta to R. Perlis, EPA, *Re: Petition to Revoke Sinon Corporation's Registration of Paraquat Technical Concentrate* (July 5, 2005), at 18-19. As pointed out in Syngenta's July 5 Petition, Sinon's technical label contains a crop (oats) use for which EPA revoked the tolerance in 1999, as well as uses which would allow residential application, even though all residential uses of paraquat were removed from Syngenta's label years ago and are explicitly prohibited in the paraquat RED.

Inclusion of any of these uses in Sinon's application would, at a minimum, prohibit EPA from expediting its review of that application under FIFRA § 3(c)(3)(B). FIFRA provides that EPA may grant a conditional registration for a pesticide that is, in composition and *proposed use*, identical or substantially similar to a currently registered pesticide or differs only in ways that would not significantly increase the risk of any unreasonable adverse effect on the environment. FIFRA § 3(c)(7)(A). Sinon's Elixir can be considered neither "substantially similar" nor "identical" to Syngenta's product if its label includes these additional uses. See EPA, GENERAL INFORMATION ON APPLYING FOR REGISTRATION OF PESTICIDES § 2-14 (2d 1992). For the same reason, Sinon's application cannot qualify for expedited review without incorporating an equivalent standard of human health met by Syngenta's paraquat.

Finally, as noted above, there is no evidence that Sinon has supplied any new data to support its Elixir application. If Sinon has not at a minimum submitted the product-specific studies, as well as at least the data needed by EPA to conduct the risk assessments required to support Sinon's proposed new uses under FFDCA § 408(b) (requiring a risk assessment on non-occupational exposure from use in and around the home or recreation areas) and FIFRA § 3(c)(7)(A) (requiring an incremental risk assessment), Sinon's application is insufficient and should be denied.

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August 24, 2005
Page 14

III. CONCLUSION

Sinon's application to register an end-use product containing the active ingredient paraquat is fundamentally flawed and must be denied:

- for all of the reasons set forth in Syngenta's January 23, 2004 Petition to Deny Sinon Corporation's application to register its technical paraquat product and Syngenta's July 5, 2005 Petition to Revoke that erroneously granted registration;
- because Sinon cannot formulate an end-use product from a technical product subject to revocation;
- because Sinon's choice of trademark would illegally misbrand its end-use product and dangerously mislead the public regarding the hazards associated with paraquat;
- because Sinon's ability to act as a responsible steward of paraquat and its overall fitness to maintain a paraquat registration are once again called into question by its latest lapse in product stewardship, amplifying Syngenta's existing concerns with regard to Sinon's complicity in the illegal importation of a pesticide into the United States;
- because registration of any end-use paraquat product that does not meet the human health and safety standard established by Syngenta's manufacturing use and end-use products would create an illegal incremental risk under FIFRA;
- because Sinon has failed to provide an offer to pay compensation for reliance on Syngenta's data pursuant to FIFRA Section 3(c)(1)(F); and
- because Sinon's proposed label likely incorporates the same unsupported uses that Syngenta's Petition to Revoke identified in Sinon Corporation's technical label.

Syngenta respectfully requests that EPA deny Sinon's pending application for registration of its end-use Elixir product, or at a minimum discontinue processing the application until (i) EPA promulgates its decision with regard to Syngenta's pending Petition to Revoke Sinon's technical registration, (ii) determines Sinon's fitness to receive a registration, (iii) receives proof from Sinon that its paraquat is substantially similar to Syngenta's, and (iv) receives evidence that Sinon has made a legally sufficient compensation offer.

Syngenta requests that EPA confirm that it will not grant Sinon's applications for registration before making a final determination on this Petition and that Syngenta will have an opportunity, before EPA makes a decision, to supplement this Petition if and when Sinon makes

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August 24, 2005
Page 15

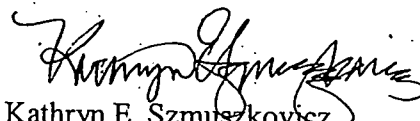
an offer to pay. *See* 40 C.F.R. § 152.99(c)(3). Syngenta further requests that because EPA's action on this Petition is final agency action subject to judicial review, the Agency grant Syngenta ten days in which to seek an administrative or judicial stay prior to any final approval of the registration that EPA may decide to grant.

IV. NO WAIVER

In filing this Petition, Syngenta does not waive any of the rights available to it in any forum to seek further relief under FIFRA or any other source of law.

Thank you for your consideration.

Sincerely,



Kathryn E. Szmuszkowicz
Counsel for Syngenta Crop Protection, Inc.

Attachment (1 Exhibit)

cc: J. Jones (EPA)
L. Rossi (EPA)
T. Putsavage (Counsel for Sinon)

CERTIFICATE OF SERVICE

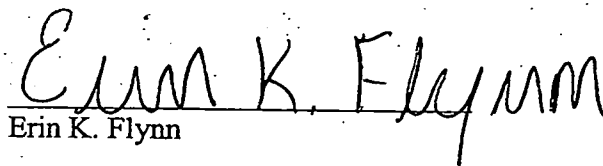
I hereby certify that on this 24th day of August, 2005, copies of the attached *Petition to Deny Sinon USA Inc.'s Application to Register an End-Use Pesticide Product Containing the Active Ingredient Paraquat Dichloride Under the Proposed Name "ElixirTM"* were delivered to the following by the method specified below:

Robert G. Perlis
Office of the General Counsel
U.S. Environmental Protection Agency
Ariel Rios Building, Mail Code 2333A
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Hand Delivery

Telisport Putsavage
Wright & Sielaty
1990 Old Bridge Road
Lake Ridge, Virginia 22192-3026

FedEx and Certified Mail


Erin K. Flynn

8-800

ChemReg[®]

INTERNATIONAL, LLC

1990 OLD BRIDGE ROAD, SUITE 201
LAKE RIDGE, VIRGINIA 22192-2383

DIRECT: 703-492-0541
MAIN: 703-492-0445
Fax: 703-492-0668

E-MAIL: butz@chemreg.com
WEB SITES: www.chemreg.com
www.pesticide.net

ROBERT G. BUTZ, PH.D.

August 2, 2005

By Certified Mail Return Receipt No: 7004 2890 0002 8127 0943

Syngenta Crop Protection Inc.
ATTN: Regulatory Affairs
P. O. Box 8300
Greensboro, NC 27419

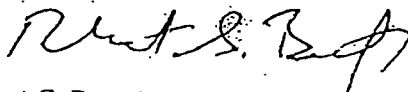
RE: Intent to Apply for a Registration Containing the Active Ingredient Paraquat Dichloride

To Whom It May Concern:

Pursuant to Subpart E of Part 152 of Title 40 of the Code of Federal Regulations, this letter is your notice that Sinon USA Inc. intends to apply to the U.S. Environmental Protection Agency to register an end-use pesticide product, Elixir[™], containing the active ingredient paraquat dichloride, and intends to cite data submitted by Syngenta Crop Protection in support of its application.

At the appropriate time, Sinon USA Inc. will make an offer to pay compensation as required by the Federal Insecticide, Fungicide, and Rodenticide Act.

Sincerely,



Robert G. Butz, Ph.D.
Registration Agent for Sinon USA Inc.

cc: Sinon USA Inc.

CONSULTANTS TO SUCCESS[®]

Expertise in Toxicology, Residue and Product Chemistry, Environmental Fate, Efficacy, Registration Strategies and Implementation, Regulatory Compliance, Label Development, Exposure and Risk Assessments, Data Citation and Compensation, Study Design and Monitoring.

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Hope
Johnson/DC/USEPA/US
08/17/2005 08:44 AM

To Angela Huskey/DC/USEPA/US@EPA, Gautam
Srinivasan/DC/USEPA/US@EPA
cc Donald Stubbs/DC/USEPA/US@EPA, Jim
Tompkins/DC/USEPA/US@EPA
bcc
Subject New Sinon Paraquat End use Product Application

Good Morning-

Well, here's a heads up on another paraquat issue we will have to deal with. Sinon USA has just submitted an application for a paraquat end use product (82557-R) using Sinon Corps. technical that we just registered (70552-1). They are saying that the product is substantially similar to Syngenta's 100-1074 Cyclone Concentrate product (which uses 100-1067 Paraquat Concentrate ES as its technical.)

I am SURE that Syngenta will be submitting a petition to deny very soon. SO- who gets this one?

Can we meet to discuss the issues (including the fact that now that Gramoxone Inteon is registered, Syngenta will most likely be cancelling 100-1074!) concerning this application sometime soon?

Thanks!
Hope

Hope A. Johnson
U.S. Environmental Protection Agency
Office of Pesticide Programs
Registration Division
Herbicide Branch
Phone: 703-305-5410
Fax: 703-308-1825
7505C

R30 = 3 months

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

August 11, 2005

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

PLEASE RETURN A COPY OF THIS LETTER WITH PAYMENT

OPP Decision Number: D-359653
EPA File Symbol or Registration Number: 82557-R
Product Name: ELIXIR
EPA Receipt Date: 02-Aug-2005
EPA Company Number: 82557
Company Name: SINON USA INC.

ROBERT G. BUTZ
CHEMREG INTERNATIONAL, LLC
SINON USA INC.
1990 OLD BRIDGE ROAD, SUITE 201
LAKE RIDGE, VA 22192-

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application for registration. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R30

NEW PRODUCT; ME-TOO PRODUCT FAST TRACK;

Please remit payment in the amount of: \$ 1,000 to:

By USPS:

USEPA Washington Finance Center
Pesticide Registration Service Fee
PO Box 360277
Pittsburgh, PA 15251

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By Courier:

U.S. EPA Washington Finance Center
Pesticide Registration Service Fee
C/O Mellon Client Service Center
500 Ross Street, Room 670
Box 360277
Pittsburgh, PA 15251-6277
Attn: EPA Module Supervisor
Telephone: (412) 236-2294

All payments must be in United States currency by check, bank draft, or money order drawn to the order of the Environmental Protection Agency. To ensure proper credit, please write the OPP DECISION NUMBER on your check, and enclose a copy of this letter with your payment.

You may be eligible for a full or partial waiver of the registration service fee if, for example, you qualify as a small business or are applying for a minor use, or if your application is solely associated with an IR-4 tolerance petition. Please be advised that if you intend to request a waiver, you must do so in writing within 15 days of receipt of this invoice instead of remitting the amount indicated above. OPP will not consider waiver requests after the registration service fee has been paid. Information regarding eligibility and how to request and document a fee waiver is available on the OPP Fee for Service web site at www.epa.gov/pesticides/fees.

Please send Registration Service Fee Waiver requests to:

By USPS:

Document Processing Desk (WAIVER)
Office of Pesticide Programs (7504C)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC 20460

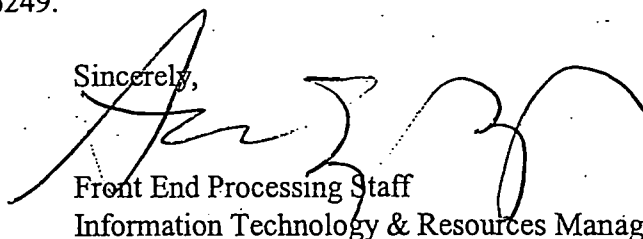
By Courier:

Document Processing Desk (WAIVER)
Office of Pesticide Programs (7504C)
U.S. Environmental Protection Agency
Room 266A, Crystal Mall #2
1801 S. Bell St.
Arlington, VA 22202

A PRIA decision time review period will not start until a fee waiver is granted and/or the Agency receives certification that the outstanding fee has been paid. If the Agency does not receive certification of payment for this action or a fee waiver request within the next 45 days, the Agency will presume that you no longer want to pursue this action. The Agency will then initiate a process that may result in administrative withdrawal of this action.

If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman at (703) 305-6249.

Sincerely,



Front End Processing Staff
Information Technology & Resources Management Division

306

Fee for Service



This package includes the following

☒ New Registration

☐ Amendment

☒ Studies? ☐ Fee Waiver?

☐ volpay % Reduction: _____

for Division

☐ AD

☐ BPPD

☒ RD

Risk Mgr.

25

Receipt No.

S-

782481

EPA File Symbol/Reg. No.

82557-R

Pin-Punch Date:

8/2/05

☐ This item is NOT subject to FFS action.

Action Code:

Requested:

R30

Granted:

R30

Amount Due: \$ 1,000

Parent/Child Decisions:

Reviewer: Bazuin

Date: 8/4/05

Remarks:

Will we really allow "Elixir" (a desirable, ingestible beverage) as a product name?

CSF OK
Group A data included

307

Fee for Service



This package includes the following

☒ New Registration

☐ Amendment

☒ Studies? ☐ Fee Waiver?

☐ volpay % Reduction: ____

for Division

☐ AD

☐ BPPD

☒ RD

Risk Mgr.

25

Receipt No.

S-

782481

EPA File Symbol/Reg. No.

82557-R

Pin-Punch Date:

8/2/05

☐ This item is NOT subject to FFS action.

Action Code:

Requested:

R30

Granted:

R30

Amount Due: \$ 1,000

Parent/Child Decisions:

Reviewer: Bazuin

Date: 8/4/05

Remarks:

Will we really allow "Elixir" (a desirable, ingestible beverage) as a product name?

CSF OK

Group A data included

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Page _____ is not included in this copy.

Pages 309 through 311 are not included in this copy.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☐ Attorney-Client work product.
- ☒ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.



Washington, DC 20460

X	Registration
	Amendment
	Other

OPP Identifier Number

Application for Pesticide – Section I

1. Company/Product Number 82557-R	2. EPA Product Manager Jim Tompkins	3. Proposed Classification
4. Company/Product (Name) Paraquat SL Herbicide™ (paraquat 43.8% SL)	PM # 25	<input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
5. Name and Address of Applicant (Include ZIP Code) Sinon USA Inc. 1080 Carol Lane, Suite 264 Lafayette, CA 94549 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg No. 100-1074 Product Name Gramoxone Max Herbicide	

Section - II

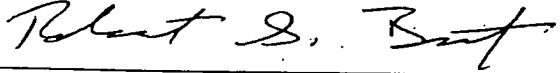
<input type="checkbox"/> Amendment – Explain below	<input type="checkbox"/> Final printed labels in response to
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input checked="" type="checkbox"/> Agency letter dated _____
<input type="checkbox"/> Notification – Explain below	<input type="checkbox"/> "Me Too" Application
	<input type="checkbox"/> Other – Explain below

Explanation: Use additional page(s) if necessary. (For Section I and Section II.)

Section III

Section III					
1. Material This Product Will be Packaged in:					
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
*Certification must be submitted		If "Yes" Unit Packaging wgt.		If "Yes" Package wgt	
		No. per container		No. per container	
2. Type of Container <input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____					
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label			4. Size(s) Retail Container 2.5, 30, 110, 200 gallon and bulk		
<input type="checkbox"/> Container			5. Location of label directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Label accompanying product		
6. Manner in Which Label is Affixed to Product			<input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input type="checkbox"/> Other _____		

Section IV

1. Contact Person (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Robert G. Butz	Title Authorized Agent, ChemReg International, LLC	Telephone No. (Include Area Code) 703-492-0541
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law		6. Date Application Received (Stamped)
2. Signature 	3. Title Authorized Agent, ChemReg International, LLC	
4. Typed Name Robert G. Butz	5. Date 07/28/2005	
EPA Form 8550-1 (2-2004) U.S. Environmental Protection Agency		

312

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date: July 29, 2005	EPA Reg No./ File Symbol 82557-R	Page 1 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549		
Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)		
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
Group A Product Chemistry:					
830.1550	Product identity and composition		Sinon USA Inc.	Own	
830.1600	Starting materials		Sinon USA Inc.	Own	
830.1620	Method of manufacture		Sinon USA Inc.	Own	
830.1670	Discussion of formation of impurities		Sinon USA Inc.	Own	
830.1700	Preliminary analysis		Sinon USA Inc.	Own	
830.1750	Certification of limits		Sinon USA Inc.	Own	
830.1800	Enforcement analytical method		Sinon USA Inc.	Own	
Group B Product Chemistry:					
830.6303	Physical state	CITE-ALL			
830.6314	Oxidation/reduction				NA per RED
830.6315	Flammability				NA per RED
830.6316	Explosibility				NA per RED
830.6317	Storage stability				NA per RED
830.6319	Miscibility				NA per RED
830.6320	Corrosion characteristics				NA per RED
830.6321	Dielectric breakdown voltage				NA per RED
830.7000	pH	CITE-ALL			
830.7100	Viscosity	CITE-ALL			
830.7220	Boiling point				NA per RED
830.7300	Density	CITE-ALL			

Signature

Name and Title
Robert G. Butz Ph.D.
ChemReg International
Authorized Agent for Sinon USA IncorporatedDate
July 29, 2005

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date: July 29, 2005	EPA Reg No./ File Symbol 82557-R	Page 2 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549		
Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)		
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
Acute Toxicity:					
870.1100	Acute oral toxicity	43685001	Syngenta	Pay	
870.1200	Acute dermal toxicity	46098803	Sinon Corp.	PER	
870.1300	Acute inhalation toxicity	46098804	Sinon Corp.	PER	
		139559	Chevron	Old	Per RED
		46105	Chevron	Old	Per RED
		153733	Syngenta	Old	Per RED
870.2400	Eye irritation	46098805	Sinon Corp.	PER	
870.2500	Dermal irritation	46098806	Sinon Corp.	PER	
870.2600	Dermal Sensitization	46098807	Sinon Corp.	PER	

Signature <i>Robert G. Butz</i>	Name and Title Robert G. Butz Ph.D. ChemReg International Authorized Agent for Sinon USA Incorporated	Date July 29, 2005
------------------------------------	--	-----------------------

TRANSMITTAL DOCUMENT

Submitter

Sinon USA Incorporated
1080 Carol Lane, Suite 264
Lafayette, California 94549

Regulatory action in support of which this package is submitted

New Product Registration ("Me-Too")
(Paraquat SL Herbicide™, paraquat 43.8% SL, 82557-R)

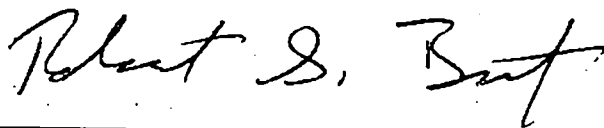
Transmittal Date

August 2, 2005

Submitted Studies

	MRID	
----		Administrative Materials
Document 1:		Butz, Robert G. July 28, 2005. Paraquat SL Herbicide™ (Paraquat 43.8% SL) Product Identity, Composition, and Analysis (Group A). ChemReg International, LLC. 74 pages. Contains Business Confidential Information

Company Official



Company Name: ChemReg International, LLC., Authorized Agent for Sinon Corporation
Company Contact: Robert G. Butz
Phone Number: 703-492-0541

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DATA MATRIX

Date: July 29, 2005	EPA Reg No./ File Symbol 82557-R	Page 1 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549	Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]	Sinon USA Inc.	Own	
[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]			NA per RED
[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]			

Signature

Robert S. Ruff

Name and Title

Robert G. Butz Ph.D.

ChemReg International

Authorized Agent for Sinon USA Incorporated

Date _____

July 29, 2005

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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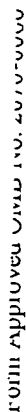
DATA MATRIX

Date: July 29, 2005	EPA Reg No./ File Symbol 82557-R	Page 2 of 2
Applicant's/Registrant's Name and Address: Sinon USA Incorporated 1080 Carol Lane, Suite 264 Lafayette, CA 94549	Product: Paraquat SL Herbicide™ (Paraquat 43.8% SL)	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
			Syngenta	Pay	
			Sinon Corp.	PER	
			Sinon Corp.	PER	
			Chevron	Old	Per RED
			Chevron	Old	Per RED
			Syngenta	Old	
			Sinon Corp.	PER	
			Sinon Corp.	PER	
			Sinon Corp.	PER	

Signature

*Robert G. Butz*Name and Title
Robert G. Butz Ph.D.
ChemReg International
Authorized Agent for Sinon USA IncorporatedDate
July 29, 2005



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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol 70552-1	Page 1 of 8
Applicant's/Registrant's Name and Address: Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC	Product: Paraquat Technical Concentrate	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1550	Product identity and composition	46098801 46331201	Sinon Corp. Sinon Corp.	Own Own	
830.1600	Starting materials	46098801	Sinon Corp.	Own	
830.1620	Method of manufacture	46098801 46331201	Sinon Corp. Sinon Corp.	Own Own	
830.1670	Discussion of formation of impurities	46098801 46331201	Sinon Corp. Sinon Corp.	Own Own	
830.1700	Preliminary analysis	46098801	Sinon Corp.	Own	
830.1750	Certification of limits	46098801 46331201	Sinon Corp. Sinon Corp.	Own Own	
830.1800	Enforcement analytical method	46098801	Sinon Corp.	Own	
830.6302	Color	46098802	Sinon Corp.	Own	
830.6303	Physical state	46098802	Sinon Corp.	Own	
830.6304	Odor	46098802	Sinon Corp.	Own	
830.6313	Stability to normal and elevated temperatures	46098802	Sinon Corp.	Own	Waiver
830.6314	Oxidation/reduction	46098802	Sinon Corp.	Own	NA per RED
830.6315	Flammability	46098802	Sinon Corp.	Own	NA per RED
830.6316	Explosibility	46098802	Sinon Corp.	Own	NA per RED
830.6317	Storage stability	46098802	Sinon Corp.	Own	NA per RED
830.6319	Miscibility	46098802	Sinon Corp.	Own	NA per RED
830.6320	Corrosion characteristics	46098802	Sinon Corp.	Own	NA per RED
830.6321	Dielectric breakdown voltage	46098802	Sinon Corp.	Own	NA per RED

Signature

Robert S. Ruff

Name and Title

Robert G. Butz Ph.D.

ChemReg International

Authorized Agent for Sinon Corporation

Date _____

May 2, 2005

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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol 70552-1	Page 2 of 8
Applicant's/Registrant's Name and Address: Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC		Product: Paraquat Technical Concentrate
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.7000	pH	46098802	Sinon Corp.	Own	
830.7050	UV/visible absorption	46098802	Sinon Corp.	Own	
830.7100	Viscosity	46098802	Sinon Corp.	Own	NA per RED
830.7200	Melting point	46098802	Sinon Corp.	Own	
830.7220	Boiling point	46098802	Sinon Corp.	Own	NA per RED
830.7300	Density	46098802	Sinon Corp.	Own	
830.7370	Dissociation constant	46098802	Sinon Corp.	Own	
830.7550	Partition coefficient	46098802	Sinon Corp.	Own	
830.7840	Solubility	46098802	Sinon Corp.	Own	
830.7950	Vapor pressure	46098802	Sinon Corp.	Own	
870.1100	Acute oral toxicity	43685001	Syngenta	Pay	
870.1200	Acute dermal toxicity	46098803	Sinon Corp.	Own	
870.1300	Acute inhalation toxicity	46098804	Sinon Corp.	Own	
		139559	Chevron	Old	Per RED
		46105	Chevron	Old	Per RED
		153733	Syngenta	Old	
870.2400	Eye irritation	46098805	Sinon Corp.	Own	
870.2500	Dermal irritation	46098806	Sinon Corp.	Own	
870.2600	Dermal sensitization	46098807	Sinon Corp.	Own	
870.3150	90-day feeding non-rodent	00072416	Scotts Co.	Old	
870.3200	21-day dermal toxicity	00156313	Scotts Co.	Old	

Signature

Name and Title
Robert G. Butz Ph.D.
ChemReg International
Authorized Agent for Sinon CorporationDate
May 2, 2005

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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol 70552-1	Page 3 of 8
Applicant's/Registrant's Name and Address: Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC	Product: Paraquat Technical Concentrate	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
870.3465	90-day inhalation - rodent	00030788	Scotts Co., Syngenta	Old	
870.4100	Chronic feeding rodent	00113718	Scotts Co., Syngenta	Old	
870.4100	Chronic feeding nonrodent	00138637	Scotts Co.	Old	
870.4200	Carcinogenicity - rat	40218001	Syngenta	Old	
		00132474	Scotts Co., Syngenta	Old	
		138637	Chevron	Old	
		153223	Chevron	Old	
		40183501	Chevron	Old	
		40202401	Syngenta	Old	
		40202402	Syngenta	Old	
		41317401	Syngenta	Old	
		40218001	Syngenta	Pay	
870.4200	Carcinogenicity - mouse	87924	Scotts Co.	Old	
		40202403	Syngenta	Old-Publ	
870.3700	Developmental toxicity - rat	113714	Scotts Co.	Old	
870.3700	Developmental toxicity - rabbit	96338	Scotts Co.	Old	
870.3800	2-generation reproduction - rat	126783	Scotts Co.	Old	
870.5100	Gene mutation (Ames test)	152690	Scotts Co.	Old	
		152691	Scotts Co.	Old	
84-2B	Structural chromosomal effects	73487	Scotts Co., Syngenta	Old	
		152692	Scotts Co., Syngenta	Old	
		40202404	Scotts Co., Syngenta	Old	

Signature

Name and Title

Robert G. Butz Ph.D.

ChemReg International

Authorized Agent for Sinon Corporation

Date

May 2, 2005

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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol 70552-1	Page 4 of 8
Applicant's/Registrant's Name and Address:		
Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC		
Product: Paraquat Technical Concentrate		
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
84-4	Other genotoxic effects	15293 100442 152695 40202405	Scotts Co., Syngenta Scotts Co., Syngenta Scotts Co., Syngenta Scotts Co., Syngenta	Old Old Old Old	
870.7485	General metabolism	28597 36297 28598 55107 28599 126096	Scotts Co. Scotts Co. Scotts Co. Scotts Co. Scotts Co. Scotts Co.	Old Old Old Old Old Old	
870.7600	Dermal penetration	126096 126097 126098 126099 153439	Scotts Co. Scotts Co. Scotts Co. Scotts Co. Scotts Co.	Old Old Old Old Old- Publ	
850.2100	Acute avian oral - quail/duck	29001 102038 160000 5008363	Scotts Co. Union Carbide U.S. FWS Submitter Unknown	Old Old Old- Govt Old- Publ	
850.2200	Avian dietary - quail	22923	U.S. FWS	Old- Govt	
850.2200	Avian dietary - duck	22923	U.S. FWS	Old- Govt	
850.2300	Avian reproduction quail	110453 110454	Scotts Co. Scotts Co.	Old Old	

Signature

Robert S. Butz

Name and Title
Robert G. Butz Ph.D.
ChemReg International
Authorized Agent for Sinon Corporation

Date
May 2, 2005

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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol 70552-1	Page 5 of 8
Applicant's/Registrant's Name and Address: Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC	Product: Paraquat Technical Concentrate	
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
850.2300	Avian reproduction duck	110455	Scotts Co.	Old	
850.1075	Fish toxicity bluegill	40098001 162737	U.S. FWS U.S. EPA	Old- Govt Old- Govt	
850.1075	Fish toxicity rainbow trout	40098001 162736 162738	U.S. FWS U.S. EPA U.S. EPA	Old- Govt Old- Govt Old- Govt	
850.1010	Invertebrate toxicity	40098001 114473	Syngenta	Old - Publ Old	Footnote 1
850.4225	Seed germination/seedling emergence	GS0262-028		Old- Govt	
850.4250	Vegetative vigor	42639601	Syngenta	Pay	
850.4400	Aquatic plant growth	42601001	Syngenta	Pay	
		42601002	Syngenta	Pay	
		42601003	Syngenta	Pay	
		42601004	Syngenta	Pay	
		42601005	Syngenta	Pay	
		42601006	Syngenta	Pay	
850.3020	Honey bee acute contact	5001991 28772 111488	Unknown submitter Dow Chemical Dow Chemical	Old Old Old	
161-1	Hydrolysis	Upton		Old	Footnote 2
161-2	Photodegradation - water	40562301	Syngenta	Old	
161-3	Photodegradation - soil	Pack		Old	Footnote 2
162-1	Aerobic soil metabolism	41319301	Syngenta	Pay	

Signature <i>Robert G. Butz</i>	Name and Title Robert G. Butz Ph.D. ChemReg International Authorized Agent for Sinon Corporation	Date May 2, 2005
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DATA MATRIX

Date: May 2, 2005

EPA Reg No./ File Symbol 70552-1

Page 6 of 8

Applicant's/Registrant's Name and Address:

Sinon Corp.
111, Chung-Shan Road
Ta-Tu Hsiang, Taichung Hsien 432
Taiwan, ROC

Product: Paraquat Technical Concentrate

Ingredient: paraquat dichloride

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
162-2	Anaerobic soil metabolism	41319302	Syngenta	Pay	
163-1	Leaching/adsorption - desorption	40762701	Syngenta	Old	
164-1	Terrestrial field dissipation	41352101	Syngenta	Pay	
		41352102	Syngenta	Pay	
164-5	Long term soil dissipation	42802101	Syngenta	Pay	
		42802102	Syngenta	Pay	
		42738701	Syngenta	Pay	
		42738702	Syngenta	Pay	
165-1	Confined rotational crop	41645601	Syngenta	Pay	
165-5	Bioaccumulation - aquatic nontarget	Waived		Waived	Per RED
840.1100	Droplet size spectrum	Cite-all	Spray Drift Task Force	Pay	
840.1200	Drift field evaluation	Cite-all	Spray Drift Task Force	Pay	
860.1300	Nature of residue - plants	Cite-all	Syngenta, Scotts Co.	Pay/old/ pub	
860.1300	Nature of residue - livestock	Cite-all	Syngenta, Scotts Co.	Pay/old/ pub	
860.1340	Residue analytical methods	Cite-all	Syngenta, Scotts Co.	Pay/old/ pub	
860.1360	Multiresidue method	Cite-all	Syngenta, Scotts Co.	Pay/old/ pub	
860.1380	Storage stability of residues	Cite-all	Syngenta, Scotts Co.	Pay/old/ pub	

Signature

Robert G. Butz

Name and Title

Robert G. Butz Ph.D.

ChemReg International

Authorized Agent for Sinon Corporation

Date

May 2, 2005

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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol 70552-1	Page 7 of 8
Applicant's/Registrant's Name and Address: Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC		Product: Paraquat Technical Concentrate
Ingredient: paraquat dichloride		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
860.1500	Crop field trials	Cite-all	Syngenta, Scotts Co., IR-4, Shell Chemical	Pay/old/pub	
860.1520	Processed food/feed	Cite-all	Syngenta	Pay/old/pub	
Special 132-1A	Endangered Species Foliar Residue Dissipation	Cite-all	Endangered Species Task Force	Pay	
132-1B	Soil Residue Dissipation	Not Required		Not	Per RED
133-3	Dermal Passive Dosimetry Exposure	Waived		Required	Per RED
		Waived		Waived	Per RED
		43618201	Syngenta	Pay	
		43618202	Syngenta	Pay	
133-4	Inhalation Dermal Passive Dosimetry Exposure	Waived		Waived	Per RED
		43618201	Syngenta	Pay	
		43618202	Syngenta	Pay	
		43644202	Syngenta	Pay	
231	Estimation of Dermal Exposure at Outdoor Sites	Not Required		Not	Per RED
				Required	
232	Estimation of Inhalation Exposure at Outdoor Sites	Not Required		Not	Per RED
				Required	
233	Estimation of Dermal Exposure at Indoor Sites	Not Required		Not	Per RED
				Required	
234	Estimation of Inhalation Exposure at Indoor Sites	Not Required		Not	Per RED
				Required	
Signature	Name and Title		Date		
<i>Robert G. Butz</i>	Robert G. Butz Ph.D.		May 2, 2005		
	ChemReg International				
	Authorized Agent for Sinon Corporation				

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DATA MATRIX

Date: May 2, 2005	EPA Reg No./ File Symbol: 70552-1	Page 8 of 8
Applicant's/Registrant's Name and Address: Sinon Corp. 111, Chung-Shan Road Ta-Tu Hsiang, Taichung Hsien 432 Taiwan, ROC	Product: Paraquat Technical Concentrate	
Ingredient: paraquat dichloride		

NOTE: Some guidelines listed but shown as "Not required" in RED, Appendix B are not included here as the guideline has been determined to be not applicable

(1) as referenced in RED, Appendix B, C:

GS0262-028: US EPA (1979) 48-hour EC50: Paraquat dichloride 29.1%: Daphnia magna: Test 2431. Unpublished report prepared by Terrestrial Aquatic Biology Laboratory. 1 p

(2) as referenced in RED, Appendix B: "Guideline fulfilled; no MRJD #'s for this study - review dated 2/14/85

Signature



Name and Title

Robert G. Butz Ph.D.
ChemReg International
Authorized Agent for Sinon Corporation

Date

May 2, 2005

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SINON USA INC.

1080 Carol Lane Suite 264, Lafayette, CA94549 U.S.A.
Tel: 925 299-1418 Fax: 925 299-1419
E-mail: sinonusa@earthlink.net

July 27, 2005

Document Processing Desk (COADR)
Office of Pesticide Programs (7504C)
U. S. Environmental Protection Agency
Room 266A, Crystal Mall 2
1801 South Bell Street
Arlington, VA 22202-4501
Attention: Ms. Maureen Sherrill

Re: Authorized Agent for Sinon USA Incorporated, Company No. 82557

Dear Ms. Sherrill:

Effective immediately, we are changing the Agent for our company. All official correspondence and notices should be addressed to:

Sinon USA Incorporated
c/o ChemReg International, LLC
1990 Old Bridge Road, Suite 201
Lake Ridge, VA 22192

Contact: Robert G. Butz, Tel: 703-492-0541

The official company address for Sinon USA Incorporated (Company No. 82557) remains:

Sinon USA Incorporated
1080 Carol Lane, Suite 264
Lafayette, CA 94549

This change should be reflected on all official correspondence and on all mailing lists of the Agency, including the Data Submitters List, and Product Manager records in the Registration Division. Thank you for your immediate attention to this matter.

Sincerely,

K. C. Lin

Vice President



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SINON CORPORATION

23, Sec.1, Mei Chuan W. Road, Taichung 403, Taiwan
TEL: 886-4-23726181 • FAX: 886-4-23750574

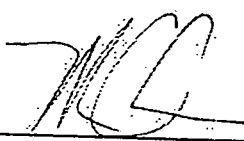
Office of Pesticide Programs (7504C)
Registration Division (RD)
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Date: July 28, 2005

To whom it may concern

This letter authorizes SINON USA INC., 1080 Carol Lane, Suite 264, Lafayette, CA 94549 to reply upon data owned by SINON CORPORATION, 23, Sec. 1, Mei Chuan W. Road, Taichung, Taiwan, R.O.C., with factory addressed at 111, Chung-Shan Road, Ta-Tu Hsiang, Taichung Hsien 43245, Taiwan, R.O.C., and on file with the Agency, for the purpose of registering Paraquat pesticides products in the United States.

SINON CORPORATION


Te-Kan Chang / Manager



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Page _____ is not included in this copy.

Pages 329 through 347 are not included in this copy.

The material not included contains the following type of information:

- ☒ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☒ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☐ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.
- ☐ Internal deliberative information.
- ☐ Attorney-Client work product.
- ☐ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

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Pages 348 through 353 are not included in this copy.

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- _____ Identity of product inert ingredients.
- _____ Identity of product impurities.
- _____ Description of the product manufacturing process.
- _____ Description of quality control procedures.
- _____ Identity of the source of product ingredients.
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- _____ Internal deliberative information.
- _____ Attorney-Client work product.
- _____ Claimed Confidential by submitter upon submission to the Agency.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.
